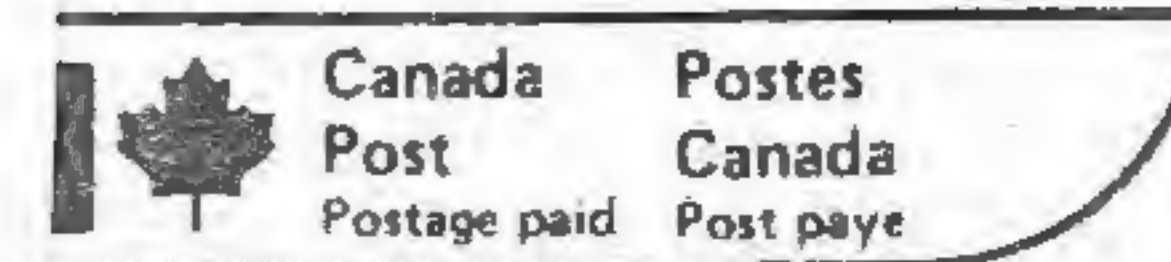


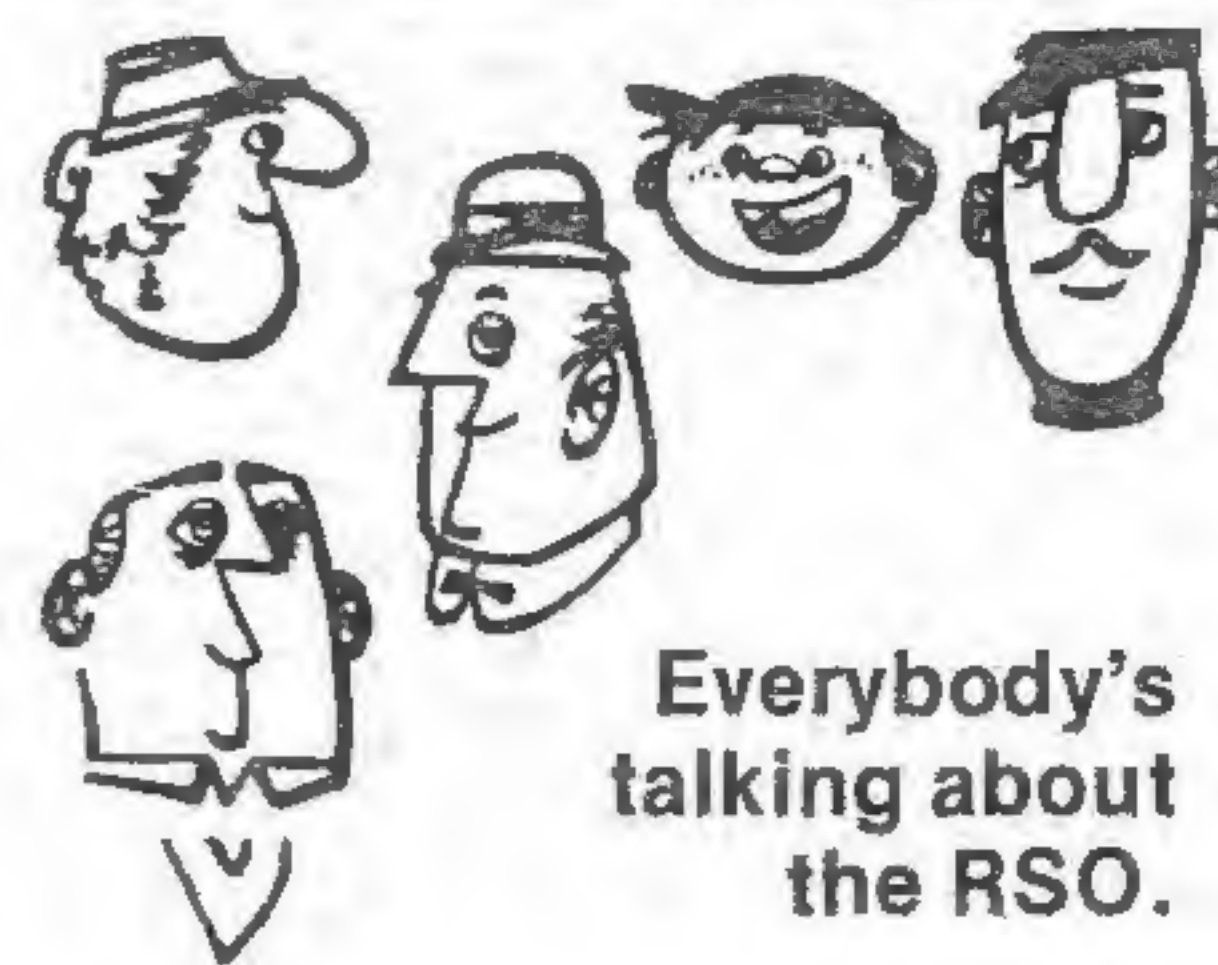
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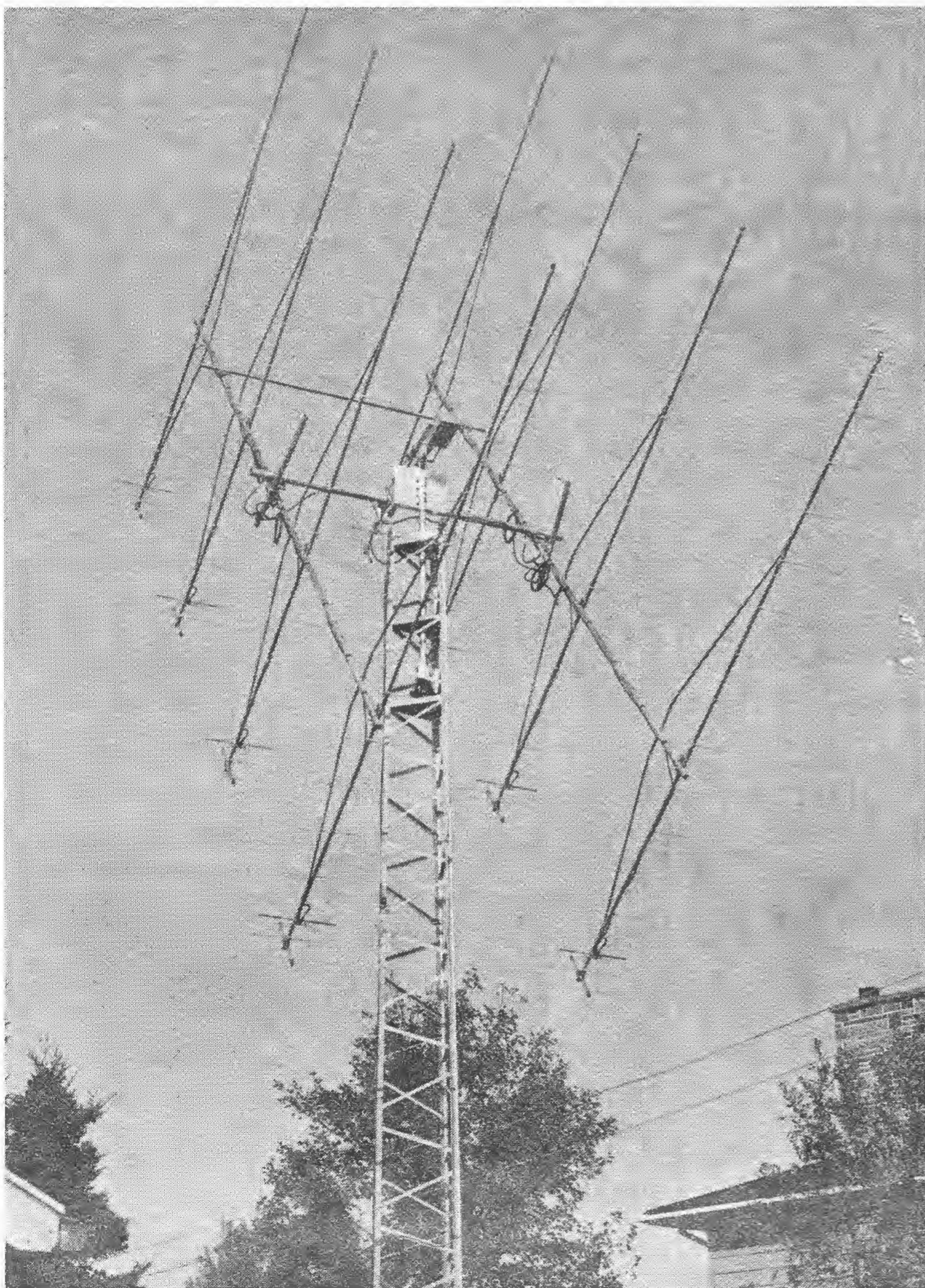


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Vol. 20, No. 1
February 1985

W.A.S. on 220MHz

A real DXpedition! See page 7



Shown here is Peter Shilton's successful 19ft. long x 11ft. wide x 25ft. high antenna.

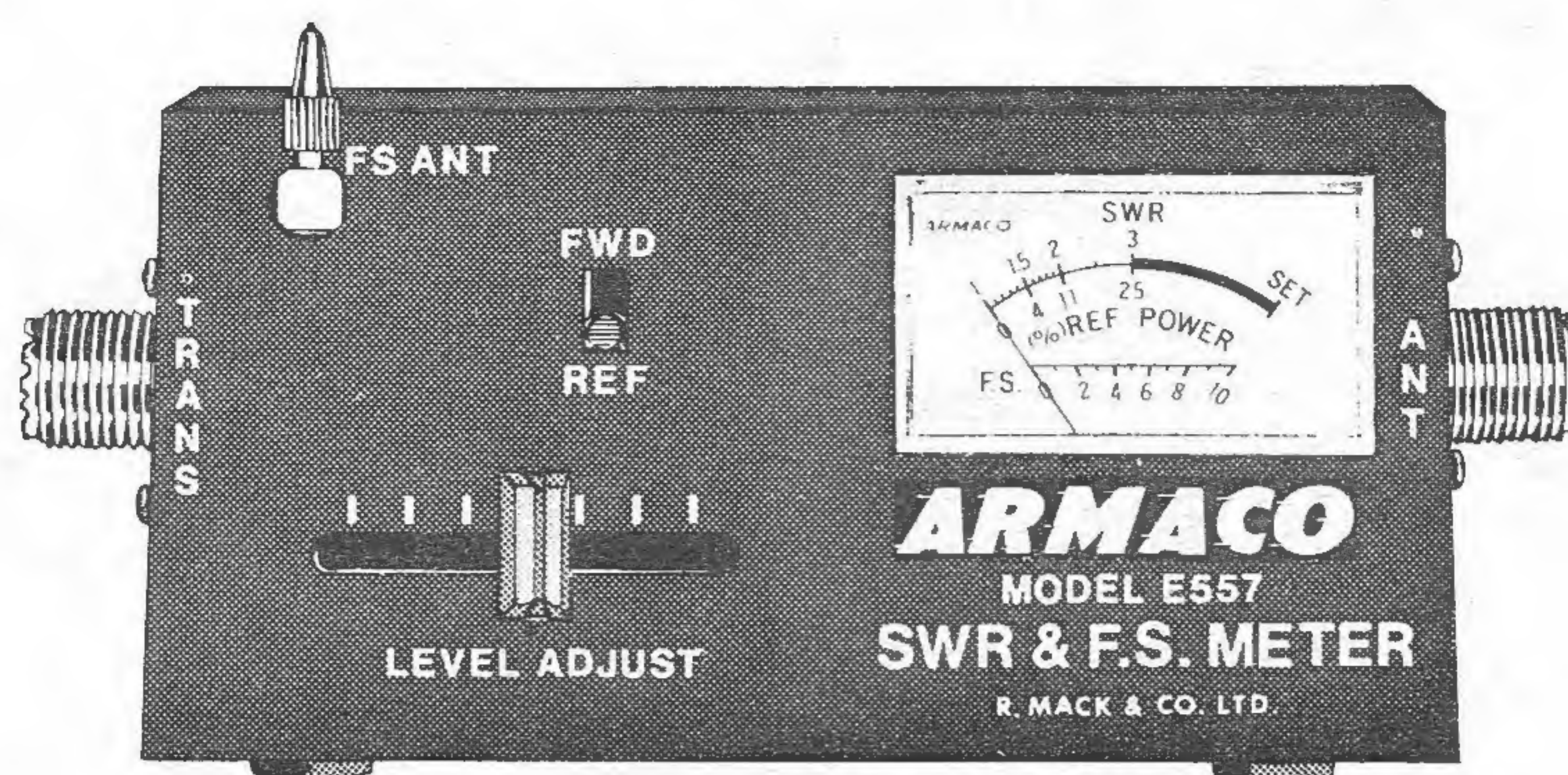
There is a better way...
Support RSO
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In this issue

- ONTARS letters
- 10GHz QSO Record
- Radio Astronomy - KP4 Style
- RSO Net Directory
- Club News
- Ontario Winter Games -
Special Event Station - VO3 OWG
- 80-metre DX Operating Practices
- Dear Ann Tenna
[Final Chapter]

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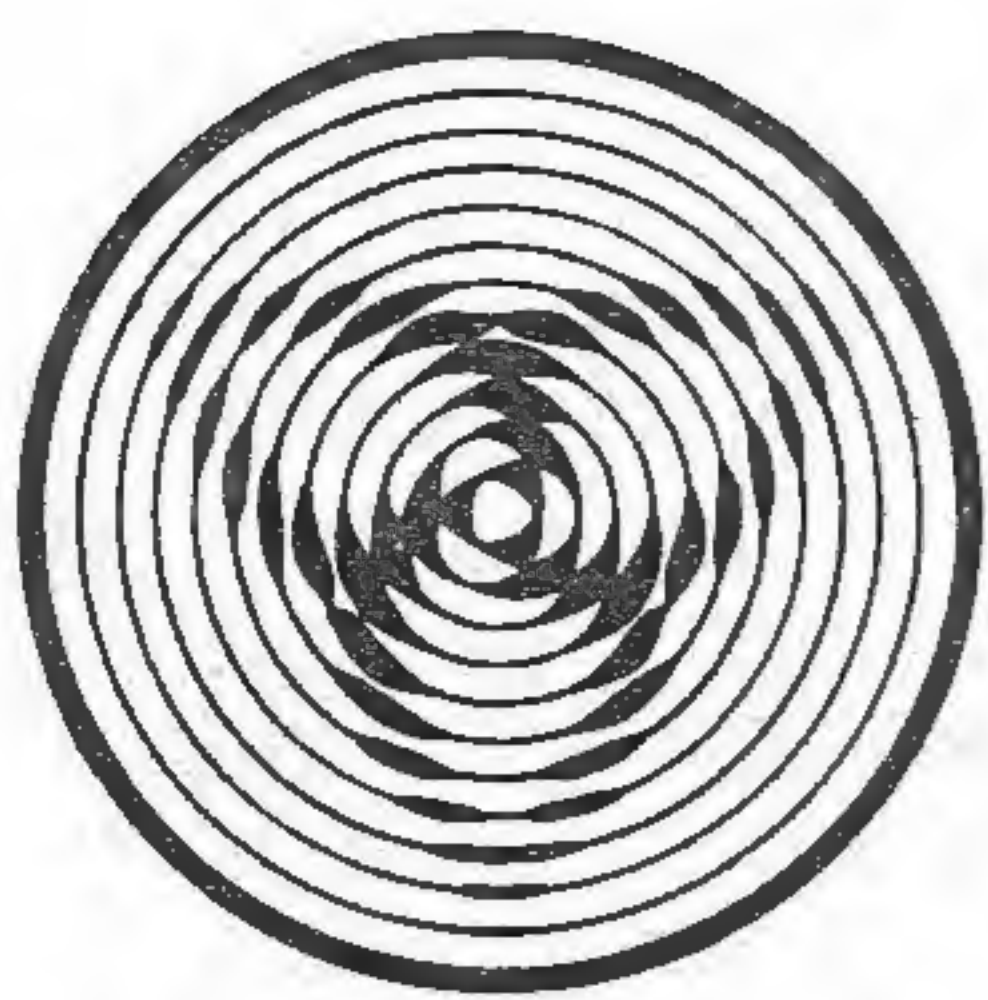
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Daily - 3.755 MHz
7:00a.m.-6:00p.m.

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1985

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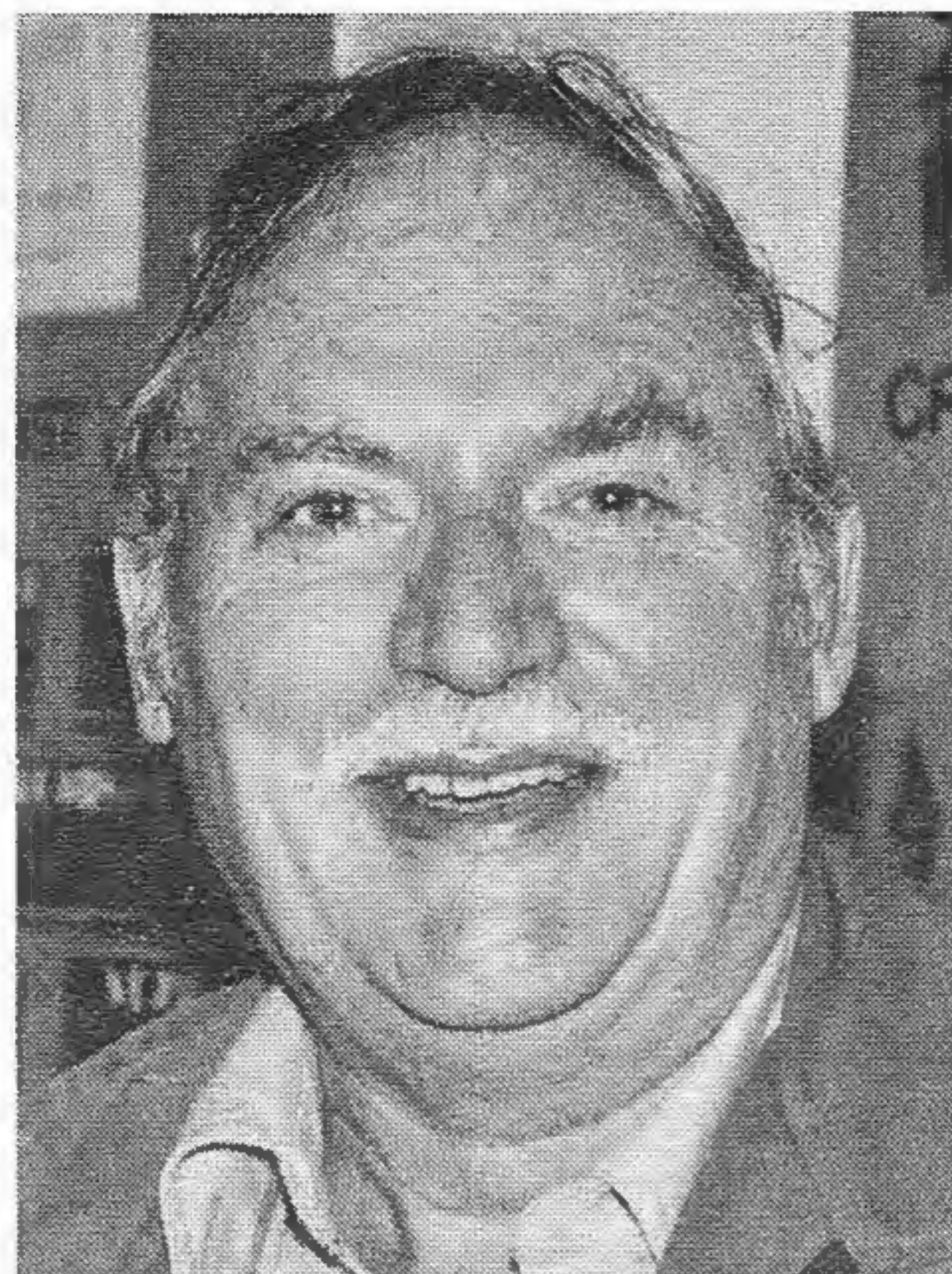
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To promote the interests of the amateur radio fraternity, and to improve communications between clubs and societies, material published in TOA may be reproduced in bulletins and newsletters of bona fide clubs. An appropriate acknowledgement of the source would be appreciated.

All correspondence for the RSO should be sent to: The Radio Society of Ontario, P.O. Box 246, Port Credit Postal Station, Mississauga, Ont. L5G 4L8. All correspondence for the TOA should be sent to: Dave Digweed, VE3FOI, TOA Editor, 12 Frederick St., St. Catharines, Ont. L2S 2S2.

Advertising - Rate and copy information, please contact Joan Powell, VE3FVO, P.O. Box 390, RR2, Nepean, Ontario K7R 3H1.

President's message



Here we are at the beginning of a new year, facing the challenges of a rapidly changing world. We need only to look back a few short years to see the dramatic changes in our hobby. A recent study indicates a large number of active Amateurs are using computers.

During the course of this year you will be asked for your ideas regarding the direction and objection your Society should take in the future. As these ideas come in, they will be passed on to you.

We have some interesting comments regarding the ONTARS Net frequency. From the comments I have heard so far, the majority of users of the frequency do not feel it necessary to move from 3755.

As you will read in this issue the \$25. Ham plates are available now. Again, thanks to Barc, VE3HAH for his efforts on behalf of all of us.

73.

Al, VE3DQJ, president

RSO Directors

Dick Atkinson, VE3JBO
Ron Bell, VE3BDZ
Bob Chrysler, VE3IEL
Chesley Colwell, VE3DOX
Evan Herriott, VE3IND
John Micsinszki, VE3FIO
Al Stevens, VE3DQJ

D.O.C. NOTES

As of March 31, 1985, Amateur Radio Fees will be \$20.00 from \$13.50. Commercial licenses for base and mobile equipment will also increase.

Editorial



Well, here we go again into another year. I trust everyone is over their New Year's Hangover by now. Let's hope so, or you need help! Maybe a little more HAM radio or TOA Medicine.

We come into 1985 with the RSO riding high on the license plate cost reduction, a successful Ontario Bicentennial Award (so far about 150 amateurs world-wide have qualified), but where were the RSO executives and directors? Yes, some made the effort, but others STILL remain hidden in the back corners, not making any effort to even give out contacts to those that wanted them. To have an effective Society, the executive must be more "VISIBLE" on the AIR so to speak. Many times, I have been asked, when did this RSO come into existence? I never heard about it until YOU got involved. For those of you that want history, I got digging into some back issues of THE ONTARIO AMATEUR and came up with an article by VE3RX, Art Meen written in 1966 that will open your eyes and minds, hopefully, about the creation of this FINE PROVINCIAL SOCIETY. We have a HISTORY, let's continue to keep it that way.

Also, for your enjoyment, some excellent articles on VHF/UHF records. Just how many of you have received the ARRL Award W.A.S.? (Worked All States) Many right! I bet you did most of it on 80, 40 and 20 metres right? Just think ... could it be done on 220MHz? Well, it has and by a VE3 in Elliott Lake. Read about it. There's also a great article about the Radio telescope in Puerto Rico (KP4 land). The antenna is strung between mountain tops. Well, I wouldn't want to keep you. READ ON AND ENJOY. Send us more articles and photos.

73. Dave Digweed, VE3FOI, editor

Moving?

Please let RSO know
your new address.
You wouldn't want
to miss us.

Letters to the editor

This next letter is in response to Bill Birchall's letter in the December issue of TOA.

Dear Bill:

I just got my RSO bulletin so am now responding to your request for input to the question of nets (To move freq. or not).

I would suggest that the nets do not have to be conducted as though the lives of all of us depended on them.

If conditions are very poor, then allow the net controller to decide to terminate at any time, or not even start as he may so elect.

The band conditions always change hour to hour, day to day, year to year and season to season.

Let us not panic into moving frequencies. Don't change ONTARS at all. It's very nice to allow Canadian and American amateurs to call in - and for the Snowbirds too.

I think we should call on our technical people for the development of antennas for special responses to the conditions we face at this time i.e. QRM and Long-Skip. The experience I'm gaining down south shows many of the signals are readable over this distance, this is a waste of energy, so the way to go is to develop high angle pattern antennas.

The net controllers should be those who have access to two or more special antennas so that he may change the direction of the pattern to some extent. I suggest that this is the time to adapt, develop and modify our net operation, not moving the frequency.

Try listening to other nets around the countries and draw on their experiences. Advertise. All ham publications should list the nets over and over again in as many amateur publications as possible, so that as many as possible learn as much as possible about all nets and the time of their operation.

I hope this will be of some help. Don't worry about interference. Just worry about adapting and adjusting.

73.

Sincerely, Dick Shave, VE3BIS
303 Jean Ave., Lakeland, FL USA
33801

P.S. Just heard CJ Net going to 3775 — I agree with that.

Dear Dave:

It seems to me the question of moving the ONTARS Net frequency to 3745 KHz has come up again, an issue I thought had been decided March 1984 by the Executive.

For your information, I do not see any reason to move from the present frequency of 3755 KHz.

The figures of check-ins for the period since Sept. 1984 to Dec. 31, 1984 are as follows:

1984		1983
16304	Sept.	14693
17914	Oct.	15577
17492	Nov.	15551
20054	Dec.	17568

4

This does not indicate any reason to change. It also allows Canadian Snowbirds to check in and there have been quite a few. Also, any Americans with Extra-Class License can check in.

If we check into American Networks, we are always welcome, so why not reciprocate? We are all Hams.

We have an excellent Net. Let us keep it that way for all amateurs. If the RSO Executive wish to change the frequency, they can do so. To change is not in the best interest of RSO.

Thanks.

Bill Birchall, VE3FQV

ONTARS Net Manager

P.S. Total check-ins for 1984: 194,657.

Dear Sir:

With regard to the President's Message in TOA, we are opposed to any frequency change for the ONTARS Net.

This net started out at 3.755 MHz and when the U.S. Phone Band was expanded some ten years ago, the net fled down to 3.755 MHz even before the expansion took place. It seems that any move downward will place the net right in the U.S. Novice band with the problem of CW QRM to the net and this can be worse than Phone Interference at times.

Leaving the net where it is will allow U.S. amateurs to check in and more importantly it allows VE stations operating from the U.S. to call in without having to go on CW.

The amount of interference experienced will be minimal as there are only two short periods in the day when U.S. stations will be heard with strong signals on 80 metres, and this, only in winter time. There is very little chance of finding a frequency where no interference will be experienced, and the idea of hordes of 1kw stations encroaching on the net is ludicrous. If a station does cause QRM it can be asked politely to move away from the net frequency, but if that station wants to QRM the net it will do it no matter where you go.

Deliberate QRM is relatively rare and is best handled by totally ignoring it, accidental interference can easily be cleared up if both parties are tactful.

73.

Bill Hardie, VE3EFX

Tess Hardie, VE3HIR

Note from the editor:

I've also received a few other comments about the net being moved.

From Don, VE3LQS: Stay where we are.

Personally, I think ONTARS should stay on 3755 to be able to help our Snowbirds and American amateurs if nothing else. That's what this hobby is supposed to be about ... HELPING OTHERS!!!

Dear Dave:

In order that your organization is aware of the enforcement activities that are being carried out throughout the province I am sending you notice of another prosecution for unlicensed radio operation.

An Ottawa area amateur radio operator reported that an unauthorized station was operating through a local two meter repeater. An investigation by our department resulted in Mr. J. Marcel Goudreault of Ottawa appearing in Provincial Court on October 16, 1984 to answer the charge of operating an amateur radio without a license. Mr. Goudreault pleaded guilty and was fined \$500 for the offense.

I will endeavour to keep you informed of the department's activities in this area but if you have any questions, please feel free to call me at 966-6268.

C. Olsen, Regional Manager
Spectrum Control, Ontario Region
55 St. Clair Ave. E., 9th Floor
Toronto, Ontario M4T 1M2

Ontars

(13th Anniversary)

Net controllers for the 13th Anniversary on January 8, 1985 were:

Time E.S.T.	Station
7- 8	VE3BC (for VE3BGZ)
8- 9	VE3LSJ
9-10	VE3BVU (for 3NO)
10-11	VE3IQN (for 3ATV)
11-12	VE3HZ (for 3LZO)
12-13	VE3NYC (for 3LZO)
13-14	VE3FWJ (for 3ILT)
14-15	VE3MMZ (for 3GUV)
15-16	VE3GVE
16-17	VE3ENL
17-18	VE3FQV

Many thanks to all who helped make ONTARS a HUGE success. Let's keep 3755KHz ALIVE for ONTARS in 1985. There is no need to change frequency. 1,034 check-ins seem to think it's O.K. Total for 1984 is 194,657 check-ins.

73. Bill Birchall, VE3FQV
ONTARS Net Manager

Their key is silent but their memory is 599.

Cy Hitoyuki, VE3IP Toronto
Bob Maude, ex-VE3BGM
Rene Levasseur, VE3FQ London
Howard Fralick, VE3RL Belleville
Harry McNiff, VE3FAM Chatham
Hilda Collins, VE3COA Lynden
(ex-HS4AMJ H5COA) myl of
George Collins, VE3FXT
Cy Lewis, VE3DU Oakville
G.H.C. Warren, VE3HMJ Brockville

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Give us at least the information suggested in the sample order below. If we need more information, we will request it. In most cases, this is enough to proceed.

QTY	XTAL FREQ.	T/R	CARRIER	MAKE & MODEL Additional data
1		T	146.340	INOUE IC22
1		R	146.940	"
3		T	157.845	GE Royal EXEC
3		R	152.585	"

PRICING

If the pricing is obvious, total the amount, add \$1.00 for First Class mail, and send in your money order, or cheque, with the order. If there is any doubt about the formula and or price, send in the order without the money. We will price the order and inform you by return mail. In the meantime, your order will be processed and shipped on receipt of your payment.

In the example, the amateur band crystals are \$8.25 each, and the custom or commercial crystals are \$9.85 each. The total is \$75.60 plus \$1.00 = \$76.60. Ontario residents add 7% Ontario sales tax.

1985 PRICES

	HC6/U	HC25/U
<u>AMATEUR</u>		
Amateur bands	8.25	8.25
<u>CUSTOM</u>		
6 - 55 MHZ	9.85	9.85
5 - 5.9	10.90	13.15
4 - 4.9	12.00	17.50
3 - 3.9	13.15	17.50
1 - 2.9	17.50	-
55 - 100 (fifth)	13.15	13.15
Temp. Compensated Crystals		13.15
MPI Crystals		12.00

Below 1 MHZ, and above 100 MHZ, price available on request.

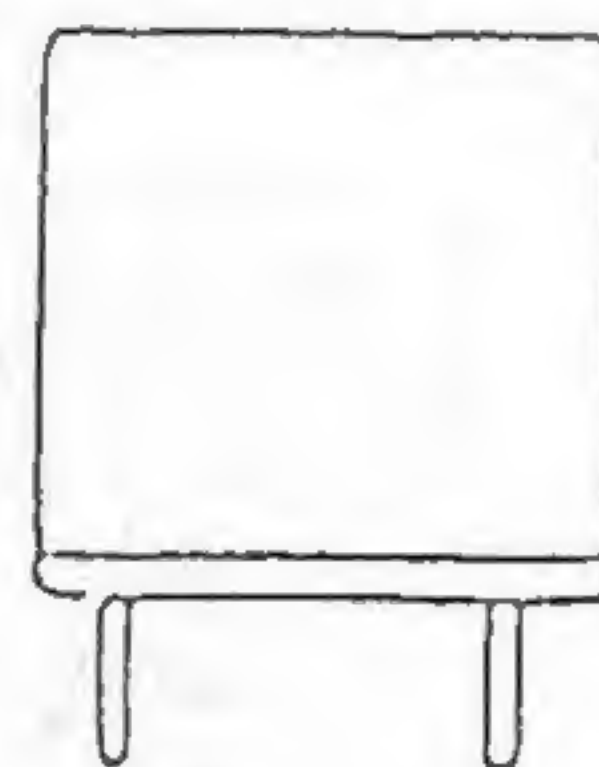
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Mocom 70	25.80
Mocom 35	22.70

REWORK MODULES to new frequency

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Hybrids (MT500, MX300)	35.50

COMMON HOLDERS Mil Designations

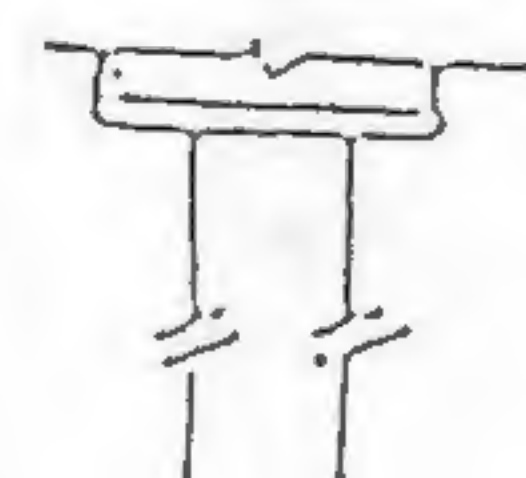
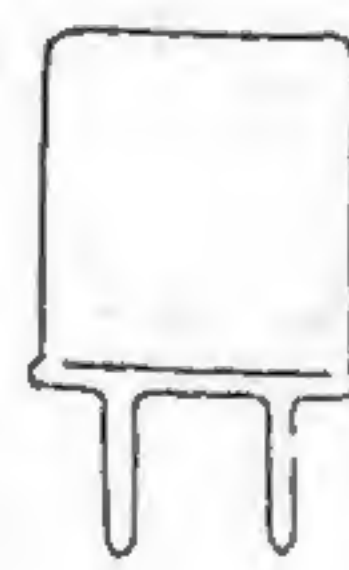


Approximately
18.41mm X 19.68mm X 8.05mm

HC-6/U .050 pins

HC-17/U .093 pins

HC-33/U wire leads



Approximately
10.21mm X 13.46mm X 3.81mm

HC-25/U .040 pins

HC-18/U wire leads

The above holders accommodate the majority or requirements.

Commercial customers should call for volume prices.

JUST ANOTHER DXPEDITION

By Mike Quarmby, VE3CKQ

Taking my TR 2400 along on a camping trip was almost an afterthought. Fishing is my first love during the summer. Often during those many biting lulls, I have wistfully considered that I should have brought the rig along. Making a mental note to do just that next time, I get back to the business of fishing.

Here I was again, camping and fishing. This time the rig came along too.

As "The Bard" says, "Now entertain conjecture of a time..." I have to go out into the forest about 2 miles to a stream, where bait minnows are in abundance. Armed with a Minnow Trap, Minnow Pail and 2-meter Handy Talkie, I drive along the forest access road to the stream area. Having parked on the road, I cross 100 yards of a sandpit and down a steep bank to the stream. The opposite side of the stream is low and flat. I gingerly cross over the stream which is two feet deep and 15 ft. wide, via a log and several stepping stones. A 15 foot cord is tied to the Minnow Trap. The other end I tie to my belt at the waist. I toss the trap into the water, sit down on a nearby rock and patiently wait for the minnows to enter the trap.

The serenity is overwhelming. Not a sound, save the insects and the gurgling water. Turning on the 2 meter rig, I give a call, through The Blackfly Repeater, and Mel, VE3 ACD comes back and tells me he has just pulled into the campsite. We chat back and forth until I become aware of a presence behind me. Turning, I see the biggest, blackest black bear two feet away, on hind legs, towering over me, nose in the air and snorting. **TER-ROR ENGULFED ME.**

I ran straight ahead, through the stream, lost my shoes. Up the bank almost reaching the top. Slid back down. Glanced over my shoulder only to see "Mr. Bruin" charging through the stream. Up the bank again. On to the sandpit and raced like the wind. God! How I wished I was still the athlete of 30 years ago. I ran and ran, like I never ran before. Faster too! I heard a steady thumpity, thumpity sound following close behind me. Thoughts racing ... I'm not going to make it! He's gaining on me! He must be inches way from me! I didn't dare look back. He might close that precious gap! My knees are already rubbery and the truck ahead looks like a Dinky Toy. Heart pounding almost drowns out the galloping sound behind me. I almost reach the truck and I'm so spent, I swear I'm experiencing an out-of-body event. I get a swat on the back of my head, which sends me sprawling headlong down beside the truck. Summoning up the last ounce of energy, I manage to roll under the truck.

Everything is spinning. I'm gasping. I can see very little. All I can hear is Niagara Falls in my ears. Again I contemplate, I'm not going to make it! An eternity passes and things start to settle down. I'm aware of a distant urgent voice. It's Mel, on my hand-held still clutched in my

hand! I tell him I'm OK, but that I'm cornered by a bear. He asks for my location and assures me that he will bring a posse and come to my rescue.

I squirm around under the truck, look in every direction, and I can see no sign of "Mr. Bruin." I cautiously crawl out from under. As I stand up, I find my movements restricted. I am tethered to the truck tire by the cord tied at my waist. Sure enough, the Minnow Trap is wedged against the tire. Now ... a piercing glimpse of the obvious.

I had been chased and whacked on the head by my own Minnow Trap!

Sheepishly, I call Mel and cancel the posse, telling him I'll explain all on my return to camp.

Two days later, I plucked up enough courage to return to the scene and retrieve my shoes and pail.

Perhaps there is a moral to this story and that may be, "DX can be achieved while running barefoot."

73, Mike.

C RSO '85 R LONDON

Negotiations have been completed with the appropriate officials and we are pleased to announce that the **LOYAL ORDER OF THE WOUFF HONG** will conduct an induction of new members at the usual hour of 12 midnight on Saturday, September 28, 1985 as a part of the RSO/CRRL '85 Convention. This is an event that you will not want to miss as it is seldom that this secret society conducts such a ceremony in Canada.

Plan to attend the banquet this year for a real different experience. Our banquet chairman is busy lining up a star-studded floor show for you. It alone will be worth the price of your registration.

Having trouble with cable TV interference? Don't miss the session with leaders from the CATY field.

For RTTY buffs the latest RSO/CRRL '85 news can be picked up on "THE LITTER BOX" on 3600 KHz Tuesdays or Thursdays 1800-2300 EST or Saturdays 1200-2300 EST.

THIS COUPON IS WORTH \$2.00 OFF THE COST OF REGISTRATION
WHEN YOU PRE-REGISTER BEFORE SEPTEMBER 6, 1985.

C
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Joint Annual Convention
September 27 - 29, 1985
Holiday Inn - City Centre

DISPLAYS/DEMONSTRATIONS/PRESENTATIONS/FILMS/FELLOWSHIP

THEY WILL ALL BE IN LONDON ONTARIO SEPTEMBER 27-29, 1985
Offer valid until September 6, 1985. One per registration

TOA - Feb. '85

Notice To All SPARC Members

(including XYL's and OM's)

You are cordially invited
to attend the
South Pickering Amateur
Radio Club Inc.

Club Reunion Wine & Cheese Party

Friday, February 23, 1985
8:00 p.m. to 10:30 p.m.

at the

GRENADA RESTAURANT

Sheridan Mall

Pickering, Ontario

\$8.00 per person

Tickets available from

Ken, VE3KXT

Pat, VE3MCK

Tom, VE3KZE

75th Anniversary of Girl Guides

This year marks the 75th Anniversary of the Girl Guide World Wide.

Closer-to-home plans are underway to help celebrate this via the amateur radio network. CLARA (that's the Canadian Ladies Amateur Radio Assn.) are planning a Girl Guide Jamboree on the air from Feb. 17th to Feb. 23, 1985, to have as many Girl Guides talk to each other via ham radio. D.O.C. has been asked to grant special prefixes to amateur stations participating. Since the Canadian Girl Guides were first formed in St. Catharines in 1909, look for VE3SAS (or special prefix) operating with girl guides from that area. A special QSL card will be sent to each contact. Cathy Hrischenko, VE3 GJH, is looking after this in the Toronto area and would like to hear from those that are interested. She can be reached at 56 Stockdale Cres., Richmond Hill, Ontario L4C 3S9 or phone (416) 884-6780.

W.A.S. on 220MHz

Peter M. Shilton
6 Stollery Place
Elliot Lake, Ont. P5A 1C1

My interest in VHF/UHF dxing started about 1 year after obtaining my license in 1969 at age 16. I found 20/15/10 metre dxing somewhat boring and was looking for a new challenge when I was introduced to Larry Dobby (now VE2YU) and Dennis Mungham (VE3ASO), both avid VHF'ers. Through them, my interest in VHF'ing accelerated despite (and sometimes at the expense of) university commitments.

Having helped out with the VE3ONT VHF contest group in 1972, I realized that a completely new 220 MHz station was sorely needed. I spent the winter of '72-'73 building 10 element yagis, a transmit/receive converter, and a KW amplifier. The following summer our 220MHz score vastly improved and I became thoroughly hooked on the band. At the same time, WB6NMT, a Californian dedicated to 220 MHz operation, was "coaching" me on an EME venture through early 1974. The 4 yagis, 700 watts output and Mosfet pre-amp just wasn't "hot" enough and a qso was never realised.

By the all of 1974, it became evident that if I was to finish university (geological engineering) that ham radio had to take a back seat. Married in 1976 and moving to Elliot Lake in 1977 from Toronto, I again became active on 6 and 2 metres in late 1978.

Those years were very lean with respect to 220 MHz EME activity; however, unknown to me, a New Mexican grandmother, Lee Fish, K5FF, and her husband Fred, W5FF, had built a 32 ft. dish and were using it on 144MHz and 432 MHz. Lee was also promoting 220 MHz activity with emphasis on EME. Listening on 10-metres one day, I overheard Russ Wicker, W4WD, in Florida, talking about the 220MHz EME array he was building to provide Lee with that state. I broke in and determined that a few contacts had been made off the moon on 220MHz that year (1979) and about four stations were active.

I immediately began planning for a 220 MHz EME effort although I knew that financial constraints would do to my project what long delayed echoes do to 20-metre radio signals. Having completed an 8877 amplifier for 144 MHz in 1979, I felt that a similar amp would be necessary for successful 220 MHz EME. The June 1980 issue of Ham Radio Magazine carried just such an amp and construction was begun shortly afterwards. By February 1981, (it's not easy getting parts in Elliot Lake), I had a working 220MHz "rock crusher." I purchased eight of the new Cushcraft 220B 4.2 2 antennas and assembled the 19ft. long x 11ft. wide x 25 ft. high array during the summer of 1981. A 32ft. heavy-duty Trylon tower was installed and the array went to the top on September 15, 1981. Azimuth rotation was achieved with a T2X rotator while elevation was con-

trolled by a 90RPM surplus gearmotor driving a Canadian Tire bumper jack and two hinged aluminum plates. Pretty crude but effective antenna steering could be achieved to -40 degrees C. temperatures. My first echoes were recorded the next day - the moon had set the 1st day just as the array was bolted down.

Due to the low moon position, I waited until October 10, 1981 to attempt a two-way with K5FF. I owed Lee the first U.S. to Canada 220MHz EME qso as my efforts were constantly buoyed by her many encouraging letters and phone calls. The qso was completed in 40 minutes, with Fred, W5FF, being worked in the next five minutes. In the months that followed many other stations were worked as interest in 220MHz gathered momentum. W.A.S. had been worked on 144 and 432MHz but was still a long way off on 220MHz.



VE3EMS - Peter with W.A.S. 220MHz (worked all states) Award.

During the next three years, 41 different stations in 35 states were worked from this qth via the earth-moon-earth route. The 136 element array also performed extremely well via terrestrial propagation modes such as tropospheric ducting, auroral scatter and meteor scatter. As my qth is quite high, the top of the 32ft. tower sees a 50 mile horizon (visual). During the peak inversion months of July, August and September, qso's with stations in excess of 500 miles are almost commonplace. The Tuesday activity night regularly yields a half-dozen contacts even though the closest 220MHz station is 225 miles from Elliot Lake. Some of the more noteworthy ter-

restrial contacts include W7JF in Billings Montana (1233 miles by meteor scatter), WB5LUA in McKinney, Texas (1181 miles by tropospheric ducting) and WD5CAP, Mountain Home, Arkansas (875 miles, also by tropo).

The culmination of my 220MHz efforts occurred on September 21, 1984 with the successful completion of an EME contact with WA4LYS in Florida. As was detailed in December QST, the station was supplied by Fred Fish, W5FF, who at Lee's insistence, drove from New Mexico to Florida with a KW amp, pre-amps, relays, transmitter, receiver, and four yagis just to provide me with W.A.S. The contact took about 2-1/2 hours to complete due to Faraday rotation fading but that was far less than the unsuccessful 12 or so hours I've spent trying to work W40DW, a low power station, during the Perseids meteor shower.

Besides Lee and Fred Fish, I owe a great deal to other 220MHz DXpeditioners including W0VB, W0SD, and WB0TEM. Without their herculean efforts to put 220MHz-uninhabited states on EME, W.A.S. would still be being sought. My 220MHz W.A.S. #7 will long be felt as the high point in my 16 years as a ham. To me it is the ultimate proof that our VHF and UHF bands are far more important than many would believe.

Equipment Line-up - 220MHz

Transmitter:

Icom IC-701
Microwave Modules Transverter
Lunar Electronics 70 watt amp
Homebrew 8877 KW amp

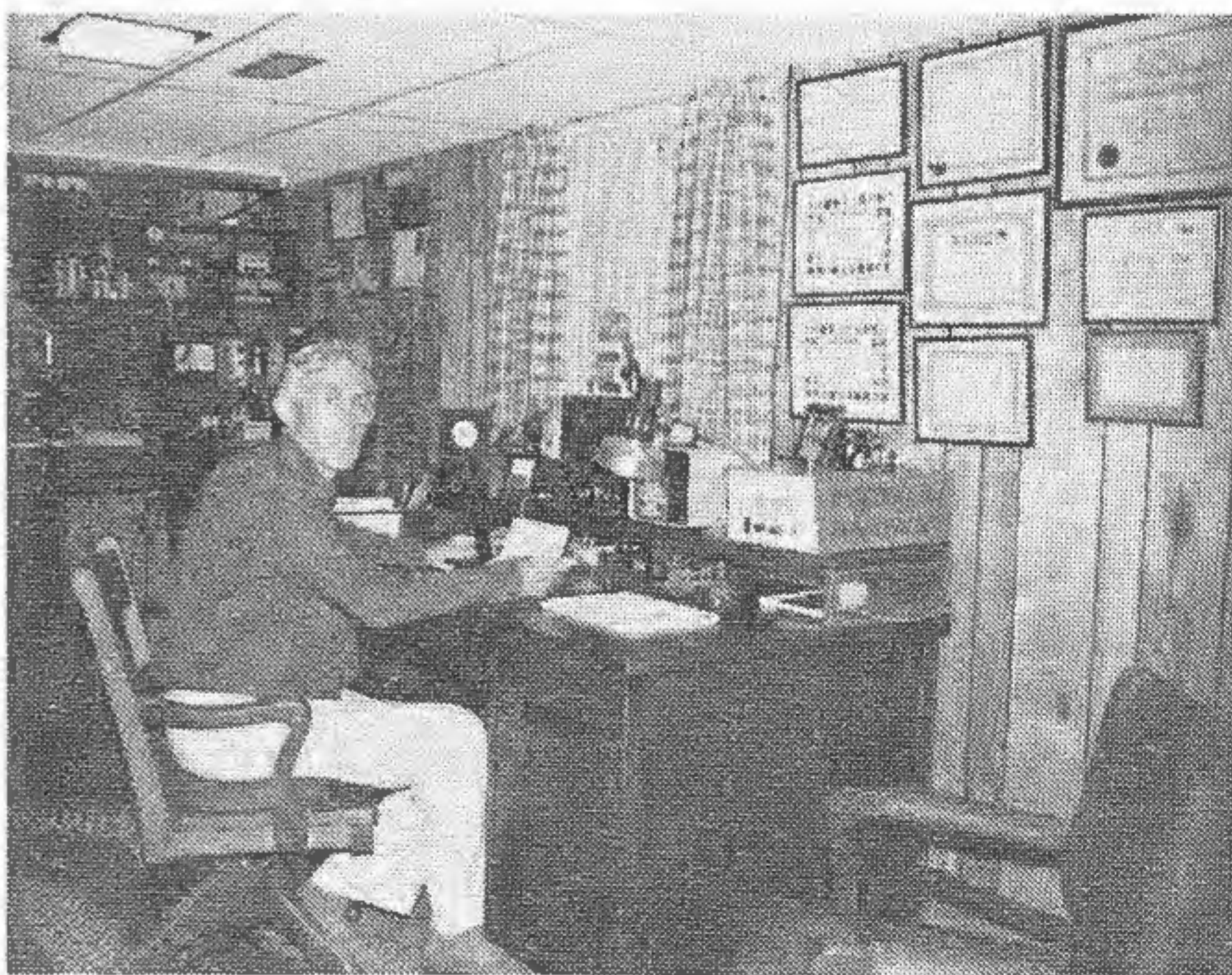
Receiver:

Icom IC-701
Microwave Modules Transverter
MGF 1200 GaAs-fet pre-amp

Antenna:

8 Cushcraft 17 el (19' long) yagis -
stacked 4 high by 2 wide
Spaced 8' vertically; 8.5' horizontally
Phased with power splitters and
Belden 8214
Fed with 60 ft. of 7/8" Andrews Hellax

VE3BB



Eric Enns, Waterloo

Eric is an official RSO bulletin station on Wednesday evening (7pm)

Real nice layout. Why didn't you smile? Your MYL told you too! (hi)

History of Radio Society of Ontario, Inc.

Editor's note: This is a reprint from *Ontario Amateur*, Vol. 1, No. 1, 1966. This history will help you members understand what RSO is all about, and that a Society representing Ontario is necessary.

It is now almost nine years since Letters Patent under date of May 22nd, 1957, issued to Noel B. Eaton, VE3DJ (now Canadian Director of A.R.R.L.), D. Alan Page (VE3XZ) and the writer, (then VE3DAR), the applicants for incorporation under than of **The Ontario Amateur Radio Federation Inc.** When the organization meetings of the newly formed Corporation were held in October, 1957, N.B. Eaton was elected the first President, the late Gerald Moes (VE3BV) was elected Secretary and the late Harold Beson (VE3HB) was elected Treasurer. The by-laws of the Federation as then established provided for membership by recognized amateur radio clubs only, these clubs being represented at meetings of the Federation, each by a Trustee and an alternate Trustee. From the outset, Oakville ARC, North Shore ARC, Metro Radio Club, Westside Radio Club, Wireless Association and Nortown ARC were members, subsequently joined by Peterborough Radio Club, Brantford Radio Club, Niagara Peninsula Radio Club, Scarborough Radio Club, Skywide Radio Club and Hamilton ARC. The annual and semi-annual meeting of the Trustees and alternates and the monthly meetings of the Executive Committees were thoroughly enjoyable and considerable progress was made in the areas of television interference, both diagnosis and treatment, and in submissions which ultimately resulted in the substantial improvement of television sets by the incorporation into all sets of a high-pass filter, beginning with the 1961 model year.

In the fall of 1961, the Trustees at their semi-annual meeting authorized the Executive to explore with the representatives of an organization called the **Ontario Amateur Radio Association**, having Headquarters in Sarnia, the possibility of amalgamation of the two organizations and these negotiations were begun at that time. Contemporaneously, incidentally, the Federation sponsored the A.R.R.L. Ontario Section Convention held in the fall of 1962.

In April, 1962, as a result of the above-mentioned negotiations with the O.A.R.A., an application was made to change the name of the Federation to the Radio Society of Ontario, Inc., and supplementary Letters Patent issued in June of that year. Undertakings were filed with the office of the Deputy Provincial Secretary of the Province by both the Federation and the Association to discontinue the use of the names Ontario Amateur Radio Federation Incorporated and Ontario Amateur Radio Association in order that the Corporation with its name

then changed to "Radio Society of Ontario, Inc.," would indeed be "the" radio society of Ontario.

With the grant of the Supplementary Letters Patent, the Society, as it then became known with the due approval of all of its members, passed by-law no. 8 in March, 1963, converting membership in the Society from Clubs to individuals, and dividing Ontario into districts as administered by D.O.C., the districts having representation roughly proportional to the Amateur population of each, the base being one representative per 150 amateurs. Thus, Clubs are no longer members with voting privileges, but rather may become affiliated clubs provided 50 percent of their voting members are members of the Society.

Membership in the Society has grown year by year, in 1965 reaching 1,136, roughly one-third of Ontario Amateurs and probably virtually all of the active amateurs in Ontario.

The Society, which has come to be recognized over the years now as the voice of Ontario Amateurs, sponsors the Keith Russell Memorial Award for the highest scoring Club Field Day Station, is the voice of Ontario Amateurs with D.O.T., has a technical department providing technical assistance to members and expects this year to publish a quarterly bulletin of good, up to the minute, technical and newsworthy material which we hope will be of interest to all Ontario Amateurs. Due to this extension of the Society's scope of operation, the Officers this year have found it necessary to increase membership fees from \$1.00 to \$2.00 per year, but we all feel that the return will be well worth the investment.

There, gentlemen, is a "thumb-nail" sketch of nine years of hard and devoted endeavour by a lot of enthusiastic and dedicated hams, and we hope that the years to come will confirm that the work expended to date has built a firm and solid foundation for the strong and vital organization to which we think all Ontario Amateurs should belong.

73.

A.K. MEEN, VE3RX

Hear VE3SWR Hear

146.190 IN - 146.790 OUT

The South Waterloo
Amateur Radio Club
is proud to present its friendly Repeater

REPEATER CHANGES

VE3LGX

New Brighton Area. Serving 401 east Belleville area on 147.165/765.

VE3NKH

Ridgeway, Niagara Peninsula area. Computer control, auto patch open. Many extras on 147.165/765.



The Ontario Medal for Good Citizenship

Do you know someone who deserves a medal?

If you know someone who has made Ontario a better place to live, through their selflessness, humanity and kindness, there are many Ontario Amateur Radio operators that give of their personal time in many volunteer projects. If you or your club want to nominate someone, why not write to:

Executive Secretary
Advisory Council
Ontario Medal for Good Citizenship
Queen's Park, Toronto, Ont.
M7A 1N3

before March 15, 1985. Twelve winners are chosen yearly.

Do you have that special QSL you would like to share with our readers? Why not send it to the editor? It will be returned promptly.

We Goofed! Sorry!



Sorry Audrey

Scarborough ARC Past President, Audrey Cuthbert, VE3ILT, receiving both RSO Field Day Trophies: Keith Russell for highest score for Ontario Clubs and Rusty Brennan Trophy for the encouragement of having new amateurs partake of the Annual Field Day. Well done Scarborough!

1984 Annual Report of the CRRL President

The year 1984 was one of stable growth and consolidation in the affairs of the League in Canada. Membership has increased, further progress has been made towards eventual autonomy, excellent relations with the Federal Department of Communications (DOC) and the telecommunications industry continue, and Canada participates actively in the affairs of the International Amateur Radio Union (IARU).

What follows is a brief summary of a very busy and productive twelve months:

1. The CRRL Board met in Toronto. ARRL President Larry Price, 4RA participated.
2. Both ARRL Board meetings in Hartford were attended as well as meetings of the Membership Affairs Committee.
3. CRRL participated in IARU Region 11 Executive Committee meeting in Mexico City.
4. Contacted DOC on the following matters:
 - a. removal of power and frequency restrictions on 160 metres.
 - b. expansion of phone privileges on 75 metres.
 - c. reinstatement of RTTY privileges on the 7.05-7.1 MHz portion of 40 metres.
 - d. transmissions for the ARRL Antenna design competition on 17 and 12 metres.
 - e. new commercial pressures on the 220 MHz band.
 - f. additional modes for the 908-928 MHz band.
 - g. problems created by the strict interpretation of "one year" on DOC examinations, and more...

5. The Ad Hoc Committee for Strengthening CRRL met in Toronto last August and a complete progress report was presented to the October ARRL Board meeting, full details of which appear in the minutes. Particular attention was drawn to the way in which the rights and privileges of the Canadian Life members are fully protected.

6. The CRRL committee on affiliated clubs has made recommendations for an affiliated club program to commence in 1985. Guidelines and affiliate charters are being prepared.

7. In conjunction with a membership mailing to all Canadian amateurs, a question on deregulation and other pertinent matters was enclosed. Returns have been most encouraging and the results will be made available early in 1985 and will be presented to DOC.

8. During 1984, for the first time, elections for Section Managers and CRRL Regional Directors were held in Canada. There were seven candidates seeking office in three CRRL Regions. The CRRL Board members elected for two year terms commencing January 1, 1985 are:

Atlantic Director:

G. Andy McLellan, VE1ASJ

Quebec Director:

Albert G. Daemen, VE2IJ

Ontario Director:

Raymond W. Perrin, VE3FN

Prairies Director:

William Gillespie, VE3ABC

Western Director:

William Kremer, VE7CSD

To retiring Prairies Region Director George Spencer, VE6AW, one of the founders of CRRL and a former Canadian Division Director and Vice-Director, our thanks for many years of service to amateur radio.

Elections for CRRL President and Vice-President will take place during the Fall of 1985, for the two year term commencing January 1, 1986.

9. The range of membership services provided by CRRL Headquarters in London continues to grow, and the groundwork has been laid for keeping membership lists and Canadian League members dues in Canada next year.

10. The CRRL Bulletin Service has been expanded and bulletins are aired over more than 60 stations and are sent to 240 amateur radio clubs across the country.

11. Legal support was provided for amateurs in Saskatoon, North York and elsewhere, fighting new by-laws and restrictive covenants.

12. The League sponsored QSL Bureaus in the provinces and territories are now operating under a new name ... the CRRL/VE/VO/VY Incoming QSL Bureau. The CRRL Central Incoming Bureau in St. John, N.B. sorted and forwarded some 450,000 cards, and the CRRL Outgoing QSL Bureau was also expanded.

13. CRRL now maintains a comprehensive information service with details on foreign licensing, reciprocal operating, etc. from more than one hundred countries.

14. Plans were completed for a National ARES program and the ARES Canada Net was established. CRRL has assumed responsibility for the Can-Am contest which is now known as the CRRL Can-Am Contest.

15. The Canadian Amateur Radio Licensing Manual was revised to conform with the new TRC-24 and cover material for the Amateur and Advanced Amateur examinations. By November over 800 copies had been sold.

16. Arrangements were completed with DOC to have the revised Manual translated into French, and to have the Federal Minister of Communications supply an introduction for both the English and French versions.

17. A new Questions and Answers book is in the course of preparation. This new edition will use the headings in TRC-24 and contain material on diagrams and digital communications.

18. CRRL volunteers attended all major Canadian hamfests including the Radio Society of Ontario Convention in Ottawa last October. Wide exposure has been given to "Amateur Radio's Newest Frontier" which has been hailed as an outstanding public relations vehicle for our hobby. In September 1985 CRRL will join with the Radio Society of Ontario in hosting RSO/CRRL '85 Convention in London, Ontario.

Congratulations to Doug Lockhart, VE7 APU of Vancouver, who was named 1984 CRRL Amateur of the year for his pioneer work in the field of amateur packet radio.

All that has been accomplished in the past year has been made possible by the hard work and dedication of so many members of the CRRL/ARRL family. A very special thank you to Audrey Staines, VE3KGS and Ray Staines, VE3ZJ of CRRL Headquarters in London, and especially to Canadian Vice-Director/CRRL Vice-President and Secretary Harry Maclean, VE3GRO for his enthusiasm, energy and unfailing sense of humour.

Thomas B.J. Atkins, VE3CDM

President

Canadian Radio Relay League Inc.

Toronto, Canada

December 31, 1984

Frequency Changes

Chicken Junction Net has moved

As of January 1, the C.J. Net is now on 3775KHz at 18:30 hrs local time, daily.

We've Moved!

Ontario Swap Shop has moved

The Ontario Swap Shop is now on 3770 KHz following The Ontario Phone Net Sundays at 1930hrs local time.

Please let TOA know about your
Club's Repeaters' Update
so we can inform our readers.

CRRL News

Richmond Amateur Radio Club has announced a **Pacific Gateway Ward**. Work six Richmond stations, any time, any band, any mode from outside of British Columbia and send your list of contacts to Richmond Amateur Radio Club, Box 94164, Richmond, British Columbia V6Y 2A3. There is no charge for the award.

Yuri Blararovice, VE3BMV, is editor of a fine new Amateur Radio publication called **Radiosporting**. This journal is devoted exclusively to contesting and DX. The first issue had 40 pages and featured articles on DXers and DX, a product review, propagation forecasts, rules for upcoming contests and more supplied by some 14 contributors from Canada, the U.S. and overseas. If you're into contesting or DX, **Radiosporting** is a must. For more information, write to **Radiosporting**, Box 65, Don Mills, Ont. M3C 2R6.

The Soviet Amateur Radio satellite, RS-6, is dead. Apparently, Russian control stations monitored the bird as it failed. Meanwhile, the Soviet RS-3 satellite is showing feeble signs of returning to life.

Arecibo Observatory

Editor's note: This article was sent to me from VE3DQG of Scarborough who has been to KP4-land and has visited this QTH.

The Arecibo Observatory is part of the National Astronomy and Ionosphere Center, a national research center operated by Cornell University under contract with the National Science Foundation.

INTRODUCTION

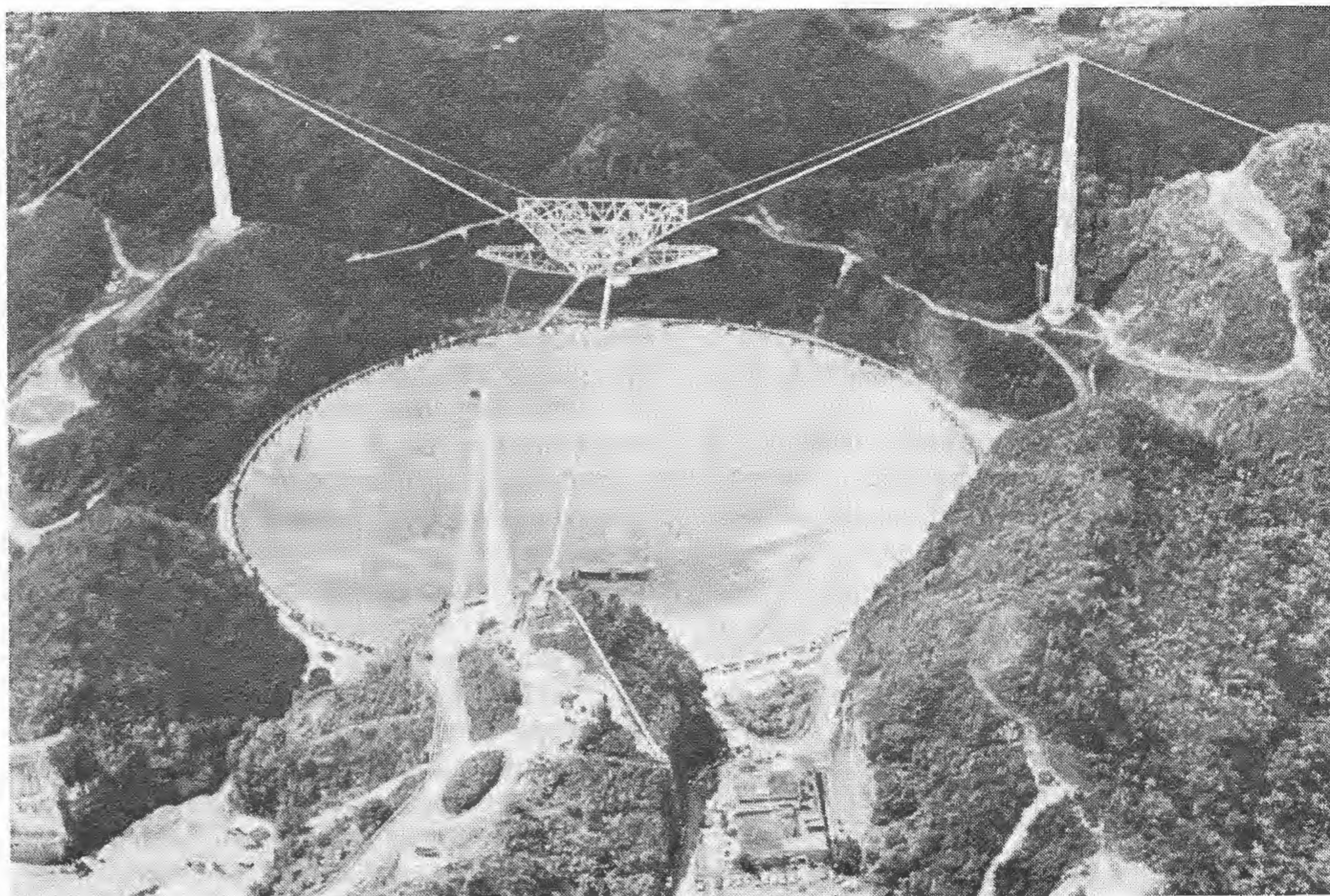
The world's largest Radio/Radar telescope is a white concrete, steel, and aluminum structure rising some 565 feet in the air out of a blue-green jungle in the mountains of northern Puerto Rico. It represents a multimillion-dollar investment in scientific research and a human commitment to the understanding of the cosmos, from Earth's atmosphere to the origin of the universe.

The enormity and stark geometry of the instrument contrast sharply with the natural beauty of the surroundings, yet all these elements are related. The telescope uses nature to explore nature. It was built in the tropics because the moon and planets pass nearly overhead here. It relies on the remote setting and the surrounding hills to reduce radio interference. It sits in a natural limestone sinkhole because of the prohibitive cost of digging a hole big enough to hold it. It depends on the vegetation growing wild under the bowl to prevent erosion of the terrain. It gains part of its stability from the constant yearly temperatures and the gentleness of the winds. It listens, as a radio receiver, for signals from celestial objects at the farthest reaches of the universe. It may communicate, as a radar transmitter, with any other beings who may share the Milky Way galaxy.

RADIO ASTRONOMY

The Arecibo telescope is a device for exploring the universe through the radio portion of the spectrum. Visible light, utilized by optical telescopes, is only one kind of electromagnetic radiation. Stars and galaxies also emit radio waves, X rays, and gamma rays. The radio sky, as seen through this instrument, appears vastly different — gone are the familiar stars and constellations seen in the night sky. The moon and planets are almost invisible. The Milky Way, far brighter than it appears in ordinary light, shares the sky with a host of new cosmic radio sources. Scientists can observe the radio sky day and night, even through thick clouds and dust.

Radio astronomy is a young science. A little more than forty years ago, Karl G. Jansky, a radio engineer, accidentally discovered radio waves reaching Earth from Space. Until that time, scientists had only one window through which to view the universe. Jansky opened a second, much larger window, since radio waves make up a proportionally wider band of the electromagnetic wave spectrum. However, the observation of cosmic radio sources is extremely difficult



because they shed so little power on Earth — only a few watts. In fact, celestial radio signals are so faint that all the energy collected in the forty-year history of radio astronomy is about equal to that released when a few snowflakes fall on the ground.

The 1,000-foot Arecibo telescope has both radio and radar capabilities. It can intercept radio waves emitted by objects in deep space, or bounce its own radar signals off nearby planets and satellites, as well as the particles in Earth's atmosphere.

STRANGE DISCOVERIES

The radio telescope has discovered some cosmic radio sources so strange that their existence was never predicted, or even suspected. The strangest are the pulsars — once giant stars that have collapsed into dense balls only a few miles wide because of the depletion of their nuclear fuel, and that emit pulsating radio signals as they spin like giant tops in space. Crushed together under tremendous pressures, the material of these stars may weigh as much as 10 billion tons per cubic inch. The first pulsar was heard in 1967 and was thought at first, because of the regularity of its signal, to be an intelligent communication from an extraterrestrial neighbour.

Another strange cosmic source, discovered in 1964, is the quasar, or quasi-stellar radio source. Quasars are whole galaxies in which a very small part (only light-weeks in diameter) releases prodigious amounts of energy equivalent to the total annihilation of millions of stars. The most distant known objects in the universe are quasars, and some are receding from us at more than half the speed of light. Optically, they appear as points of light, much like stars, while galaxies closer to Earth have a fuzzy appearance. Quasars emit tremendous quantities of radio energy which, traveling at the speed of light, have taken as long as 10 billion years to reach Earth.

SPECIAL MAPS

Radar astronomy is a powerful way to study objects of our solar system, such as the moon, the planets, the asteroids, and the rings of Saturn.

The radar telescope can hurl its signal right through the clouds of Venus, 50 miles thick, and analyze the faint echo signal to yield detailed information for the preparation of high-resolution maps of the planet's surface. Compared to the surge of power transmitted at Arecibo, the signal returned by echoing objects in space is tiny. Yet the time of arrival of these weak echoes can be measured to millionths of a second, allowing distances to be measured to a few hundred yards, and the frequency of the echoes to a few thousandths of a cycle per second, allowing speeds to be measured to accuracies of a fraction of an inch per second.

INCOHERENT BACKSCATTER

Radar signals are also used in studying the ionosphere — the thin layers of electrically charged air on the outer fringes of our atmosphere. The signals are reflected by charged particles in the upper atmosphere just the way dust scatters light energy from a searchlight beam. The study of such reflected signals is called the "incoherent backscatter" technique.

The ionosphere derives its name from the fact that solar radiation breaks up molecules of atmospheric gases into negatively charged electrons and positively charged particles called ions. Powerful radar signals transmitted from the ground excite electrons in the ionosphere; the particles reradiate part of the signal in random directions. A small fraction of the weak scattered signal is received on the ground, carrying information on the motions of the electrically charged particles, their temperatures, chemical compositions, and reaction rates.

Continued on next page

THE INSTRUMENT

Originally completed in 1963 at a total cost of about \$9 million, the 1,000-foot instrument at Arecibo is the largest telescope in the world. It was designed and built primarily as a tool for exploring the far regions of Earth's atmosphere, but its remarkable structural stability gave cause for a series of improvements that have increased its sensitivity for radar astronomy by a factor of 2,000.

Most radio telescopes have a steerable dish, or reflector, which collects the radio waves. At Arecibo, the enormous dish lies immobile in the earth, while the receiving and transmitting equipment — all 600 tons of it — hangs 50 stories in the air and can be steered and pointed by remote control equipment on the ground. The Observatory is designed so that a single experimenter can operate the entire facility alone.

The telescope was built under the leadership of William E. Gordon, formerly professor of electrical engineering at Cornell University, through contract with the U.S. Air Force Cambridge Research Laboratory. The Arecibo Observatory is currently part of the National Astronomy and Ionosphere Center, a national research center operated by Cornell University under contract with the National Science Foundation.

THE TRANSMITTERS

The Observatory has four radar transmitters: the 430-megahertz (MHz) and the 50-MHz transmitters, the ionospheric heating transmitter, and the S-band radar transmitter.

The S-band is the newest and most powerful of these systems. It is used to assemble detailed pictures of the surfaces and subsurfaces of planets and satellites. It can also hunt for dark objects in space. Within the orbit of the moon, for example, there may be other, very tiny, moons formed by the accumulation of celestial debris. Material from the earliest history of the solar system may exist in these objects. If so, there is an opportunity for further research — and a possible hazard to spacecraft travelling in this region. The telescope can detect such objects even if they are no bigger than an ordinary baseball.

RESEARCH ACTIVITIES

Scarcely a year after its completion, the Arecibo telescope pierced the dense cloud cover of Venus and accurately determined the planet's period of rotation for the first time. The telescope also confirmed the theory of retrograde rotation: Venus spins on its axis in a clockwise direction, while Earth and all the other planets spin counterclockwise. Later studies revealed the phenomenon of "Earth lock," whereby Venus turns the same face to Earth each time the sister planets pass each other in the sky.

Before 1965, textbooks stated that Mercury, the closest planet to the sun, always kept the same face to the sun as it traveled through its 88-day orbit. Astronomers at Arecibo used information gleaned by the telescope to disprove this theory and to show that Mercury turns alternated faces to the sun at each close approach.

The technique of long-baseline interferometry for use in radio astronomy was developed by Arecibo scientists and others. This process makes use of two widely separated radio telescopes to measure the sizes of extremely small objects, such as those associated with very energetic explosions in very distant quasars. In some experiments, the telescopes are stationed at almost opposite sides of Earth.

Pulsar studies have consumed much of the observing time at Arecibo ever since a British graduate student picked up the first mysterious regularly pulsing signal from outer space in 1967. As speculation ran high that an intelligent life form from another world was beaming a message to Earth, the Arecibo antenna zoomed in on the true source of such signals by identifying a pulsar in the Crab Nebula. A nebula is a cloud of interstellar gas and dust. The Crab is the still-glowing remnant of a supernova, or stellar explosion. The Chinese had observed and recorded this explosion in 1054 A.D., but the death rattle of the dying star inside it went unheard for nearly a thousand years.

The pulses received from the Crab Nebula were indeed regular, but they were of all frequencies (which would be a most inefficient way for an intelligent being to communicate) and they were extremely powerful (trillions of times greater than all the electrical energy generated on Earth). The conclusive evidence came from the Arecibo discovery that the pulsing interval was increasing by some 36 billionths of a second a day — small indeed, but clear proof that the object was a rotating star. Theoreticians concluded that the pulsar was a neutron star: bulk nuclear matter in which all empty space had been squeezed out, so that all the nuclei touched one another.

A pulsar contains as much matter as a star like the sun, but in a ball only about 10 miles wide. If earth were compressed to this density, it would be no bigger than 100 yards in diameter. All of human life, compressed to this density, would barely equal the size of a drop of water. A neutron star spins, and with it spins a magnetic field, compressed like the star until it is millions of times the strength of any magnetic field created on Earth. The spinning field acts like a cosmic slingshot, accelerating particles until they radiate strong beams of radio and light waves which sweep the heavens like enormous lighthouse beacons.

Theoretical work on pulsars continues today, as does the discovery of new pulsars and other exciting objects known as X-ray sources. Another celestial oddity, which has been theorized but never observed, is the black hole — the densest material possible, a body whose gravitational attraction is so great that nothing not even light, can leave its surface. Astronomers search for black holes by observing other, visible stars. A star which travels in orbit about a black hole will develop a strange wobble in its own path, thus providing clues for the detection of its dark companion.

Scattered through interstellar space, between the stars and dust clouds, are isolated molecules of materials like hy-

drogen, formaldehyde, and methyl alcohol — some of the basic ingredients of life on Earth. The Arecibo radio telescope can be used to gather data for analyzing and quantifying these molecules, as well as to search for other freely floating chemicals.

If the seeds of life exist in the spaces between the stars, they at least show that the chemistry of Earth is typical of what happens in the universe. But can they rain down on other planets in other solar systems where they may find the kinds of conditions suitable for them to combine and form complex molecules? If they then receive enough radiant energy from their sun, will they begin to replicate and eventually assume larger and/or more intelligent forms? These are some of the questions the astronomers at Arecibo are asking.

With some 200 billion stars in the Milky Way galaxy alone, it is likely that some number of suns have planets orbiting them, and that on certain of these, life exists. Some of these beings have probably reached the same level of understanding of natural phenomena as human beings have; some are more, and some are less, advanced. Is communication with any or all of these other worlds possible?

The 450,000-watt radar output of the new S-band transmitter at Arecibo, when concentrated into a narrow beam by the reflector, has an effective power 100 times greater than the total electric power production of all the generating plants in the world. This is the strongest signal now leaving Earth. The beacon is a manifestation of mankind powerful enough to be detected by instruments similar to the Arecibo telescope located anywhere in the Milky Way. Indeed, to the radio eyes of creatures of far distant stars, the Arecibo telescope gleams from the darkness of space with a brilliance 10 billion times stronger than the fire of the sun.

FACTS ABOUT THE CENTER

Size of site: 118 acres.

Staff: 144 scientists and supporting staff members at Arecibo; 25 at Ithaca.

Visiting scientists: The facilities in Puerto Rico are available on an equal competitive basis to all scientists. There are approximately eight visiting investigators at the site at any one time.

Cost of facility: \$9.3 million upon completion in 1963; \$8.8 million for improvements completed by November 1974.

Yearly operating cost: approximately \$3.5 million.

Technical Data

Reflector surface: 38,778 individual aluminum panels, each about 40 inches by 80 inches, attached by aluminum fittings to a network of steel cables.

Total weight of aluminum: 691,800 pounds, or about 350 tons.

Area of surface: 20 acres

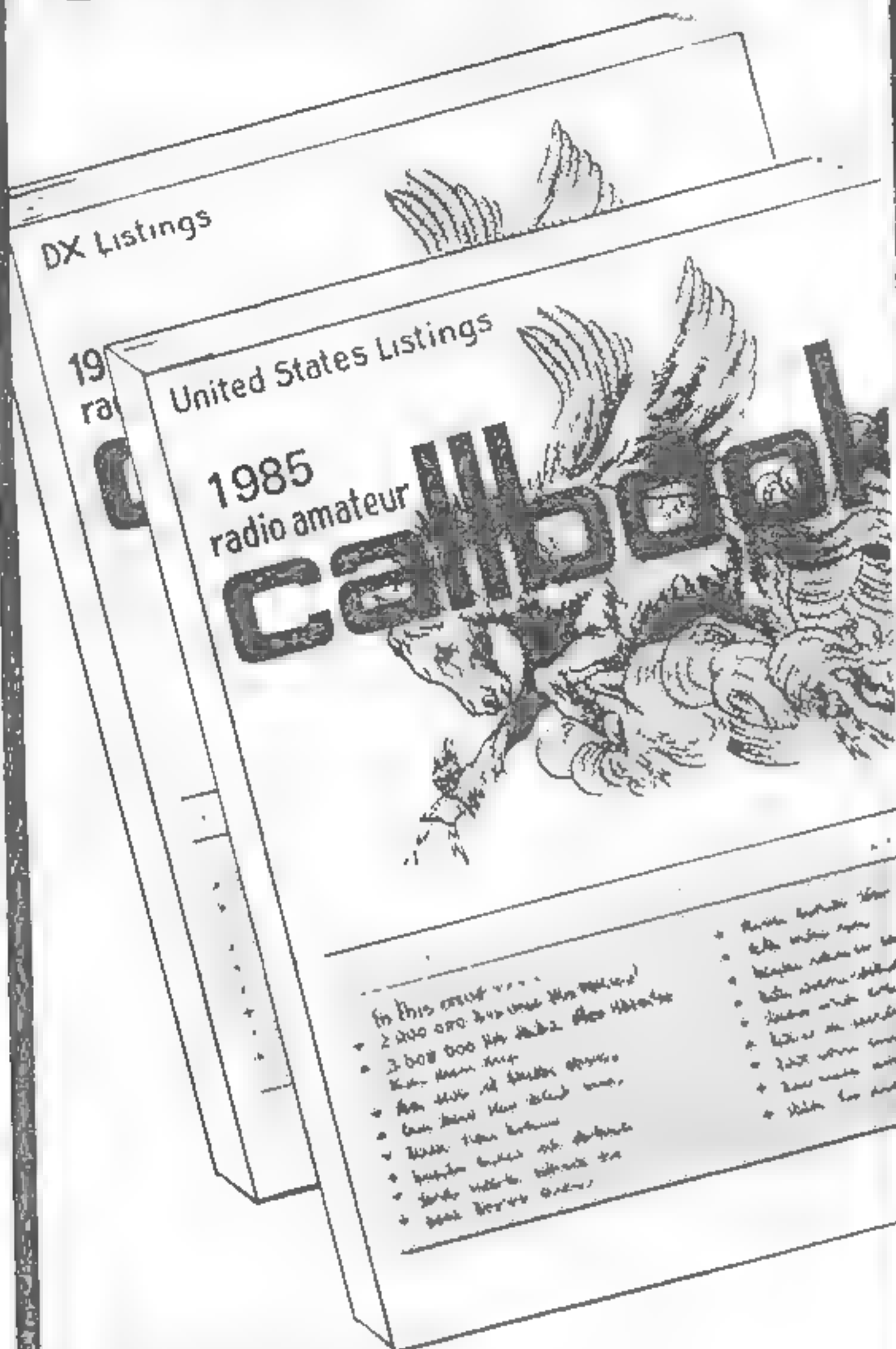
Towers (3): One is 365 feet high and the other two are 265 feet high. All tops are at the same elevation. The combined volume of reinforced concrete in all three towers is 9,100 cubic yards. Each tower is back-guyed to ground anchors with five 3.25-inch steel bridge cables.

Continued on page 14

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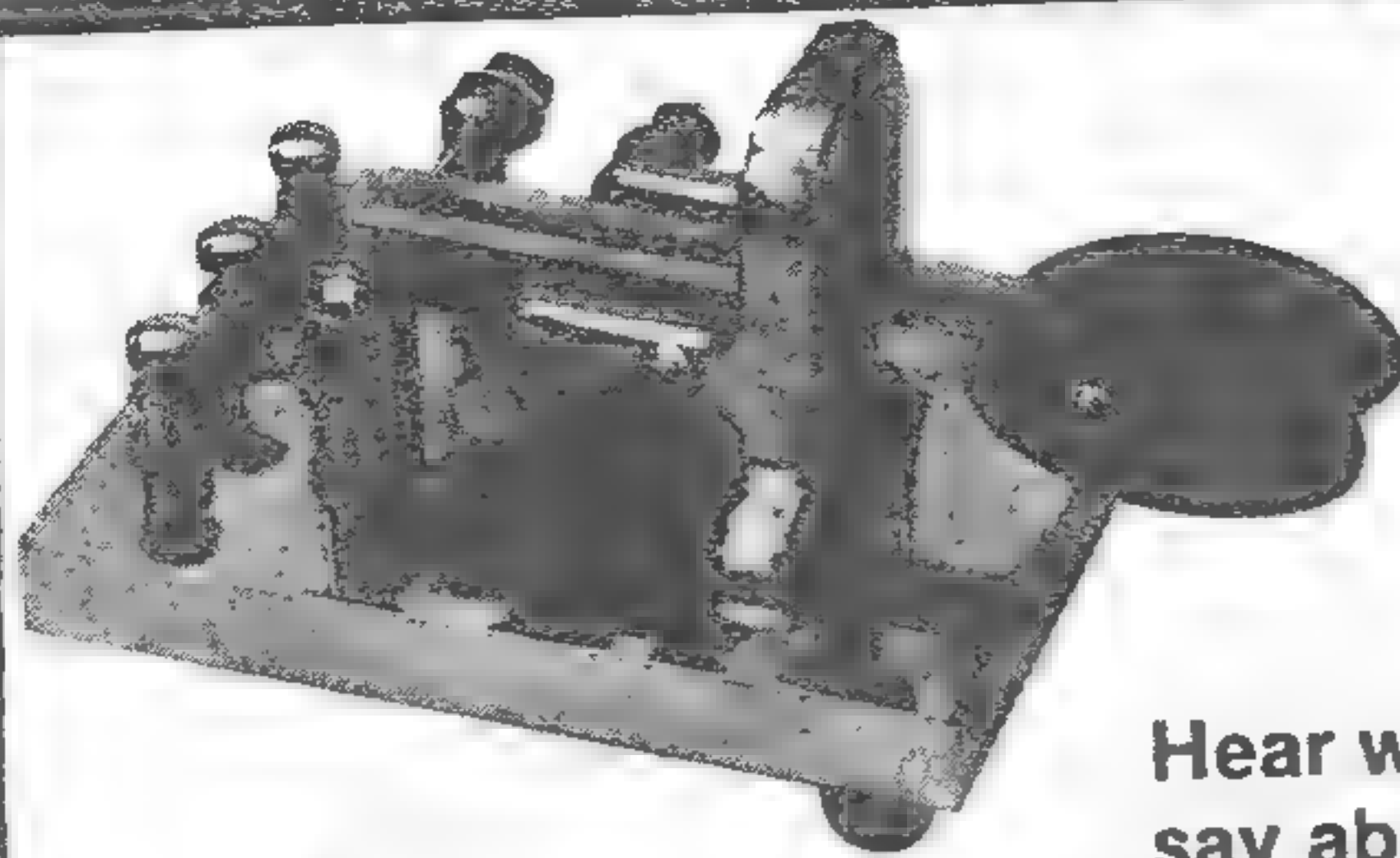
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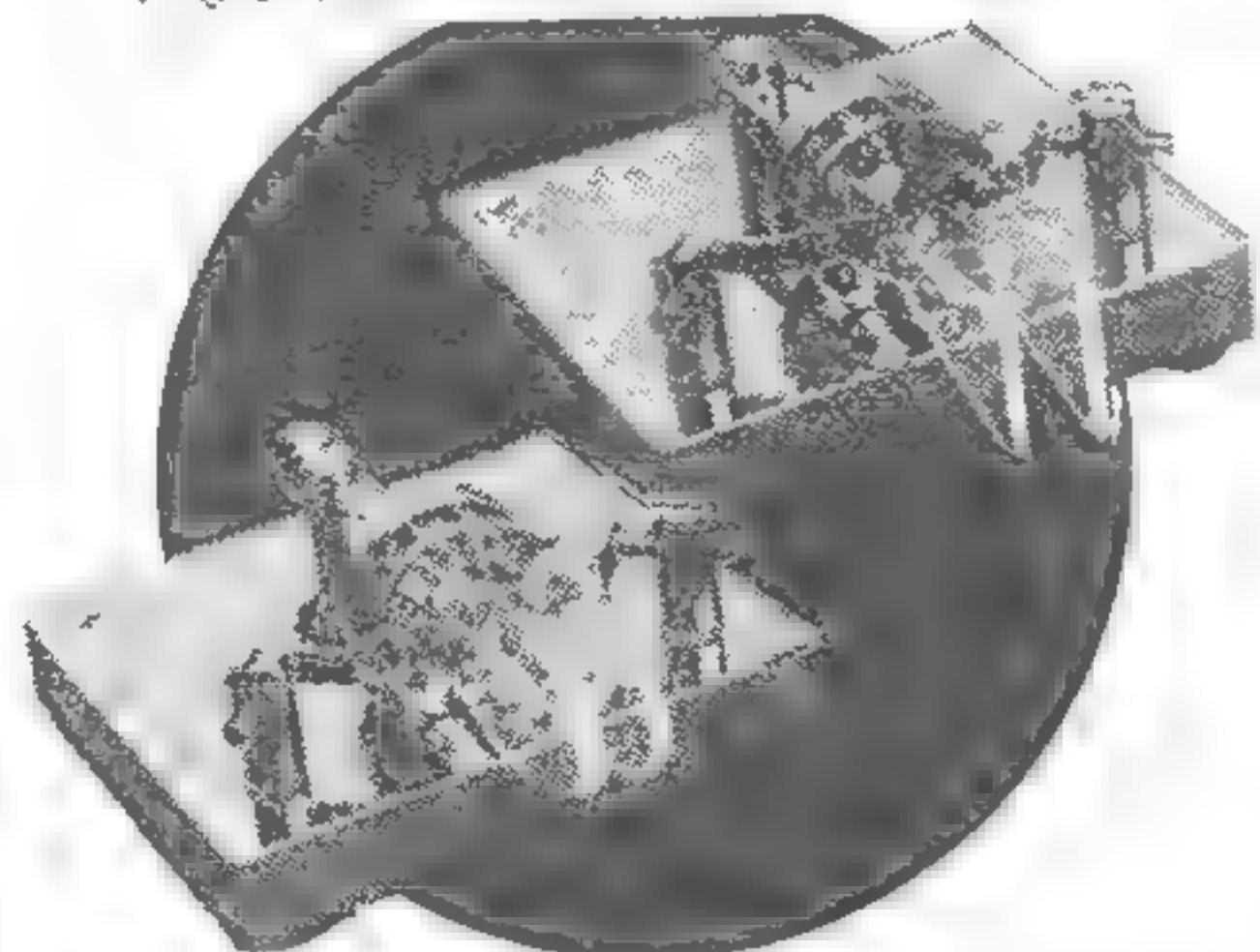
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companies still doing business in the old
manner. 73's ..."

Richard M. McGarry W4CXH

"After more than 40 years of dealing with
Vibroplex, I would like to thank you for the
many courtesies extended to me. I think you
are exemplary of the old-time American
companies that provide service ..."

OWN A LEGEND

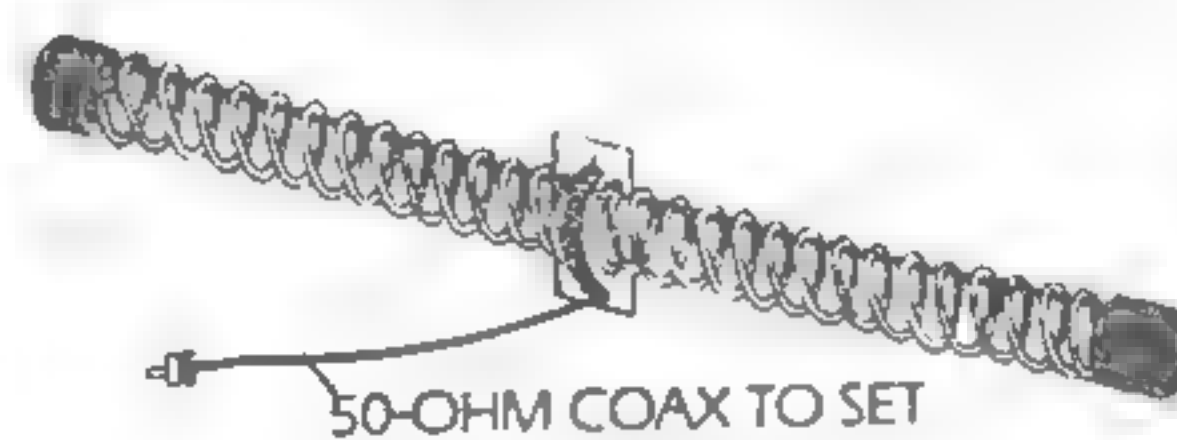
Gold Plated: \$229
Chrome Plated: \$ 89
Black base: \$ 69



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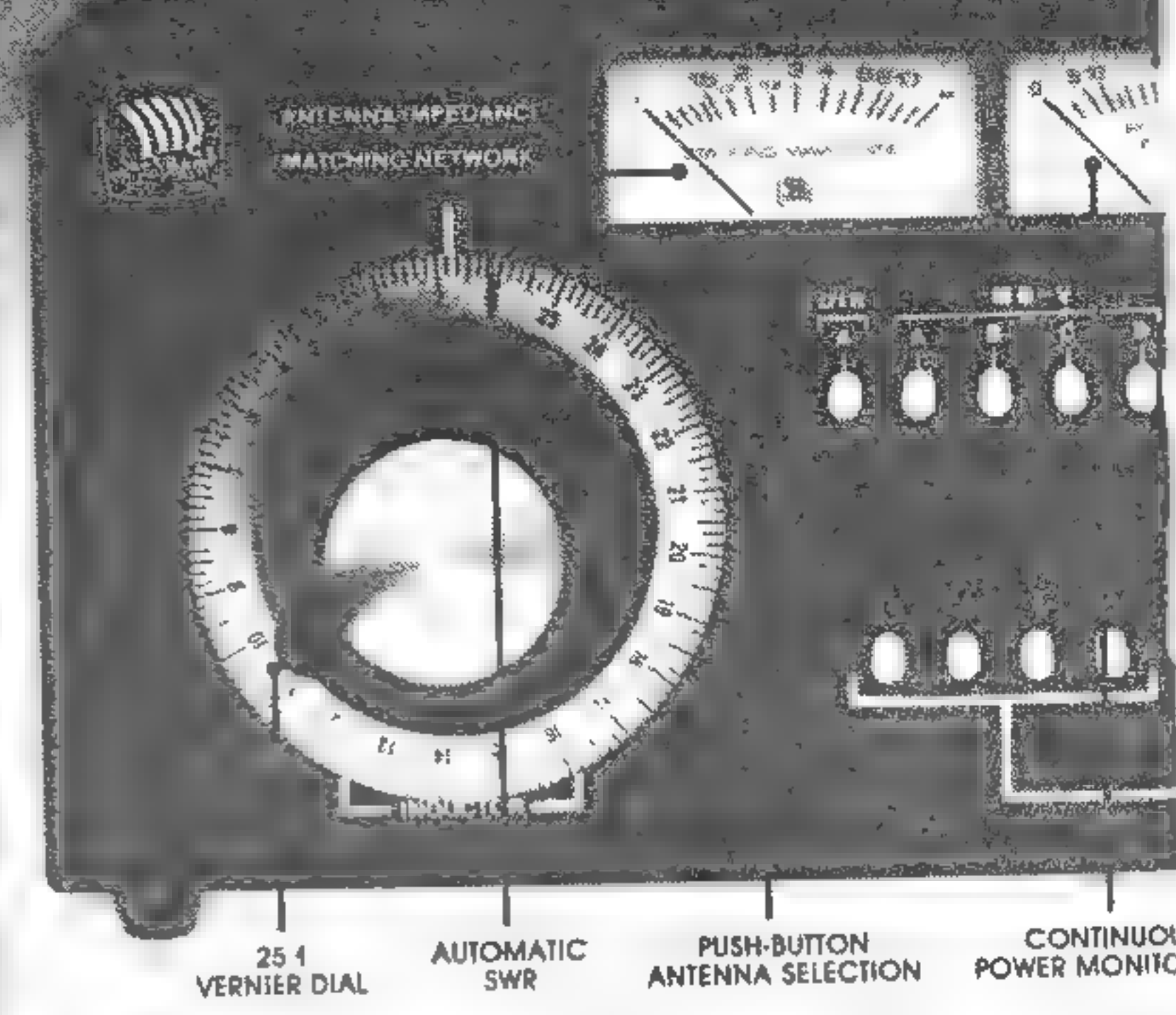
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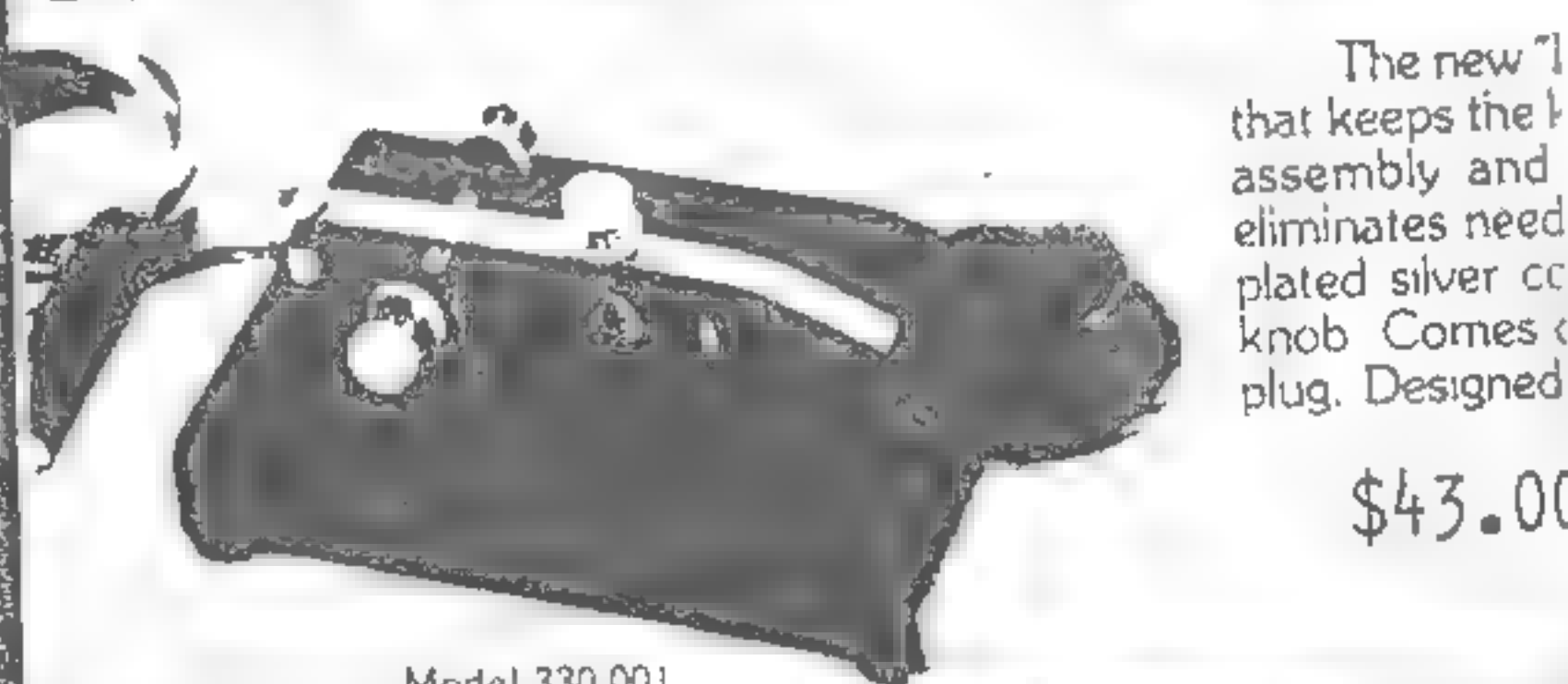


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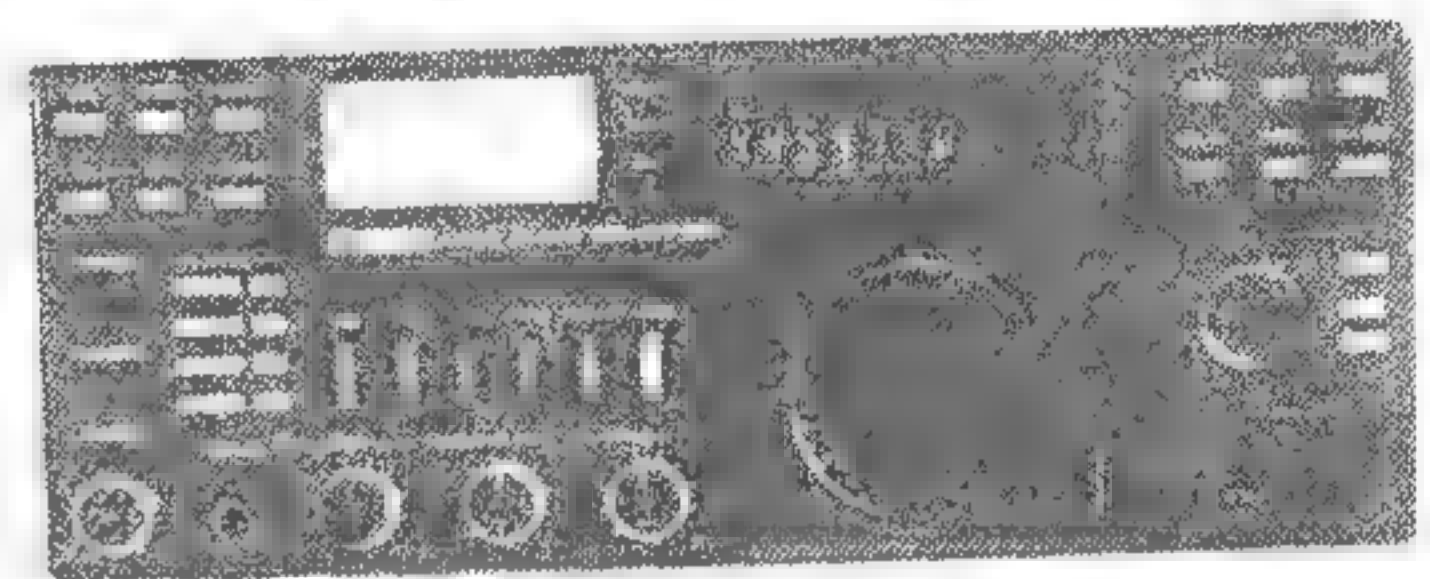
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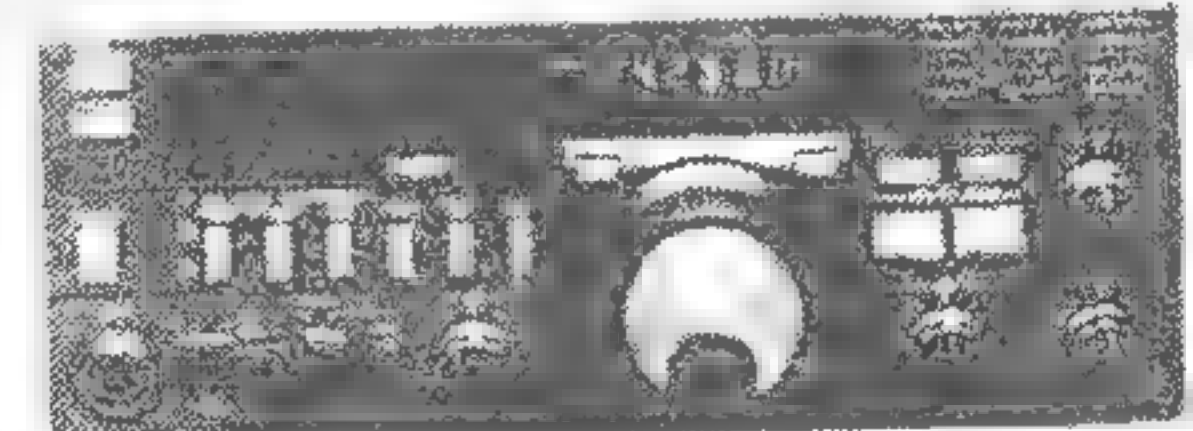
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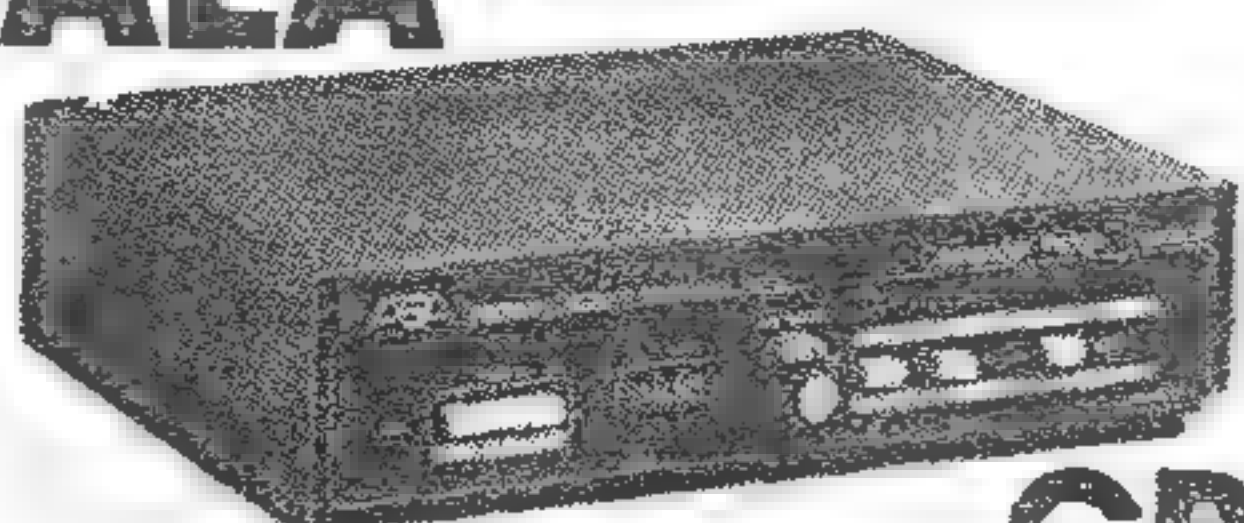


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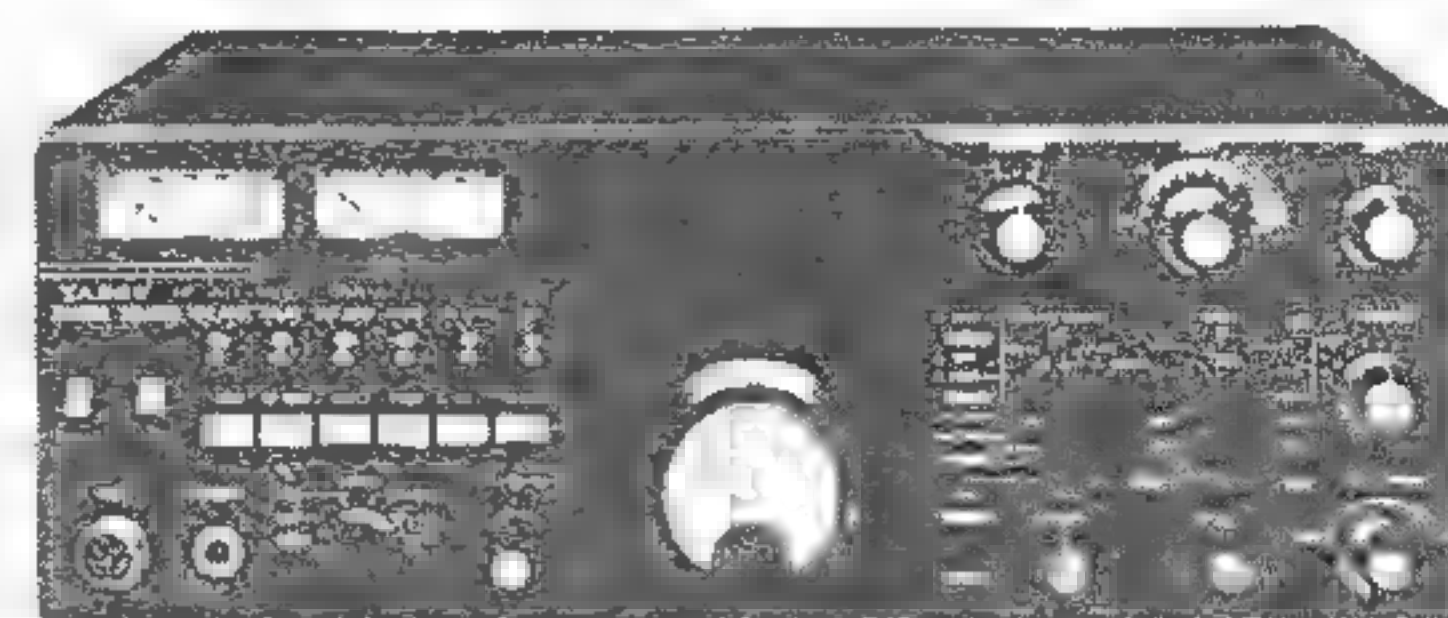
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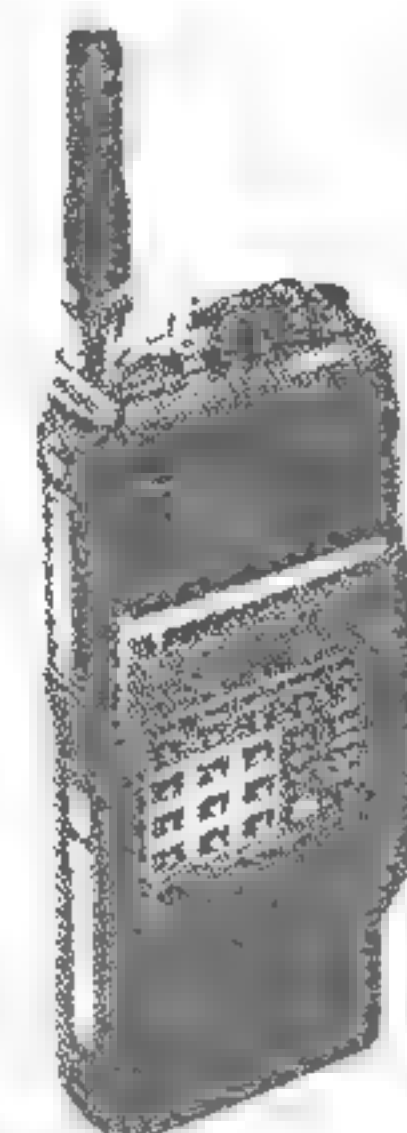
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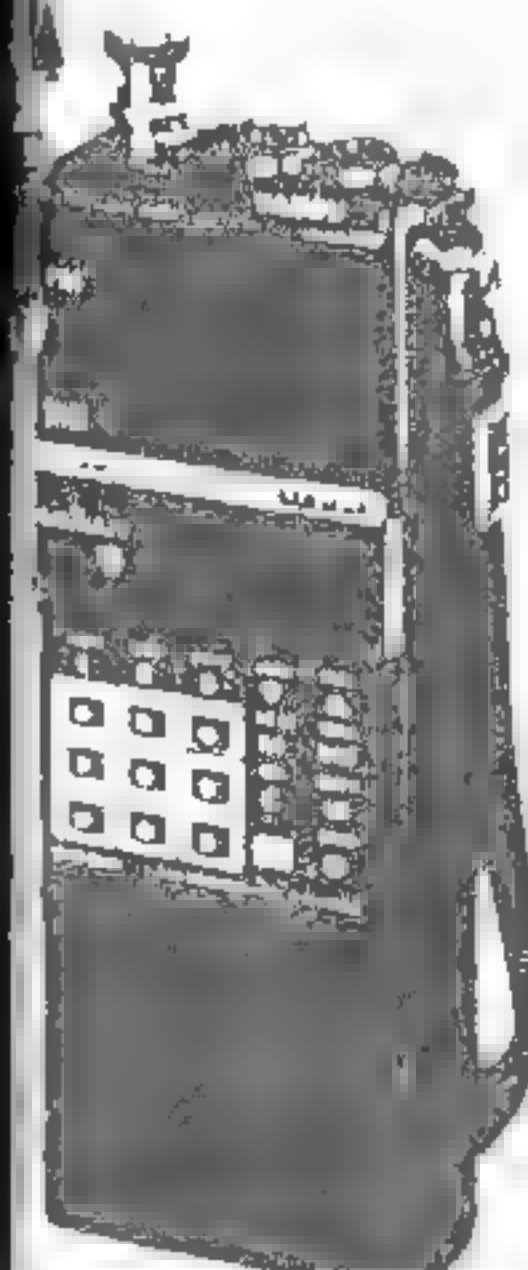
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FURTHER INFORMATION

Correspondences with the director or the administrative director of the Center should be addressed to:

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Cornell University
Space Sciences Building
Ithaca, New York 14853.**

Correspondence with the director of Observatory operations or members of the scientific, business, or personnel staffs of the Observatory should be addressed to:

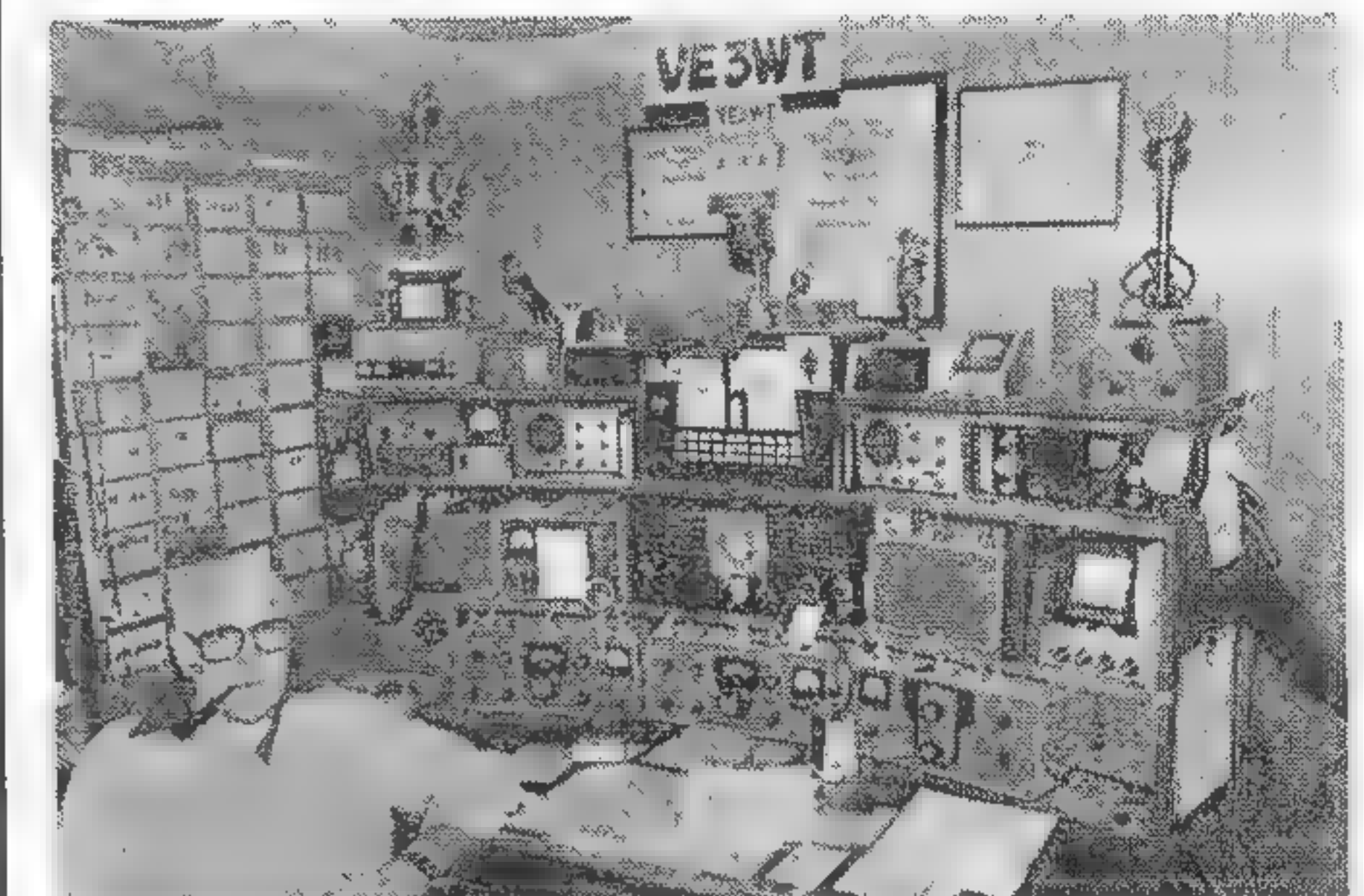
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VE3NDI



Ron, a new RSO member from Niagara-on-the-Lake. Ron is active on CW and interested in computers. Look for Ron on RTTY and cw.

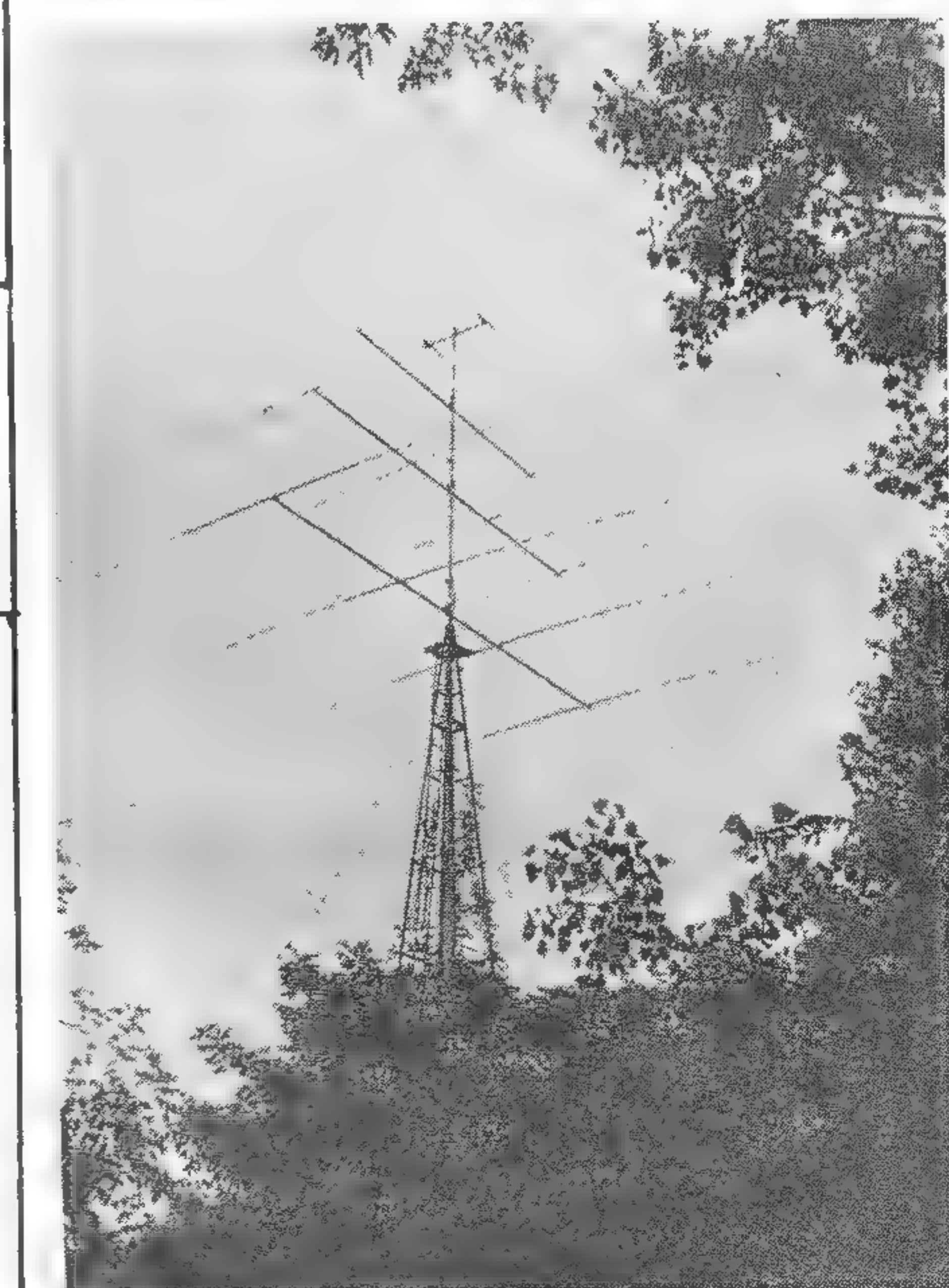
VE3WT



Howard, Mr. DX of the Niagara area, on the ARRL Honour Roll. Those hams are, top to bottom, 2-metre, 10-metre, 15-metre and 20-metre.

Homebrew along with the tower.

Howard is quite an authority on beam antennas and has made one for 40 and 80 metres called the "WT." He is working on verticals for 80/40 as well.



QSL via Robot

VE3FFW and XL3GPR may be the first Amateurs to exchange QSL cards by robot. They work for the same company, in the same building.

The company uses a robot named NT-D2 to deliver mail to its employees. So the two Amateurs put their cards in the mail, and so made this entertaining 'first.'

XL3 was the special prefix assigned to Manotick, Ontario from June 1 to 10, 1984 to celebrate the town's 125th anniversary.

Bill Cousins, VE3GPR

Tnx TCA.

Editor's note: Still waiting for my XL3 QSL card!

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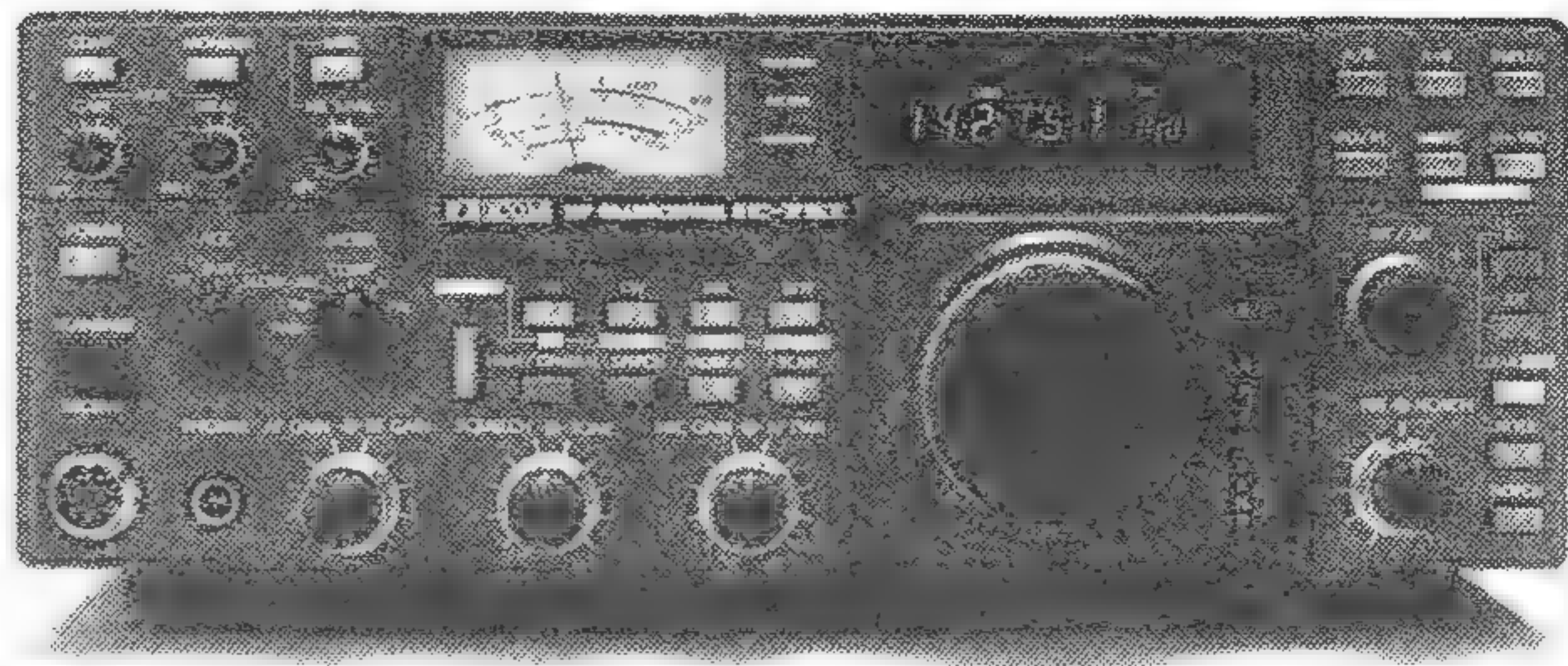
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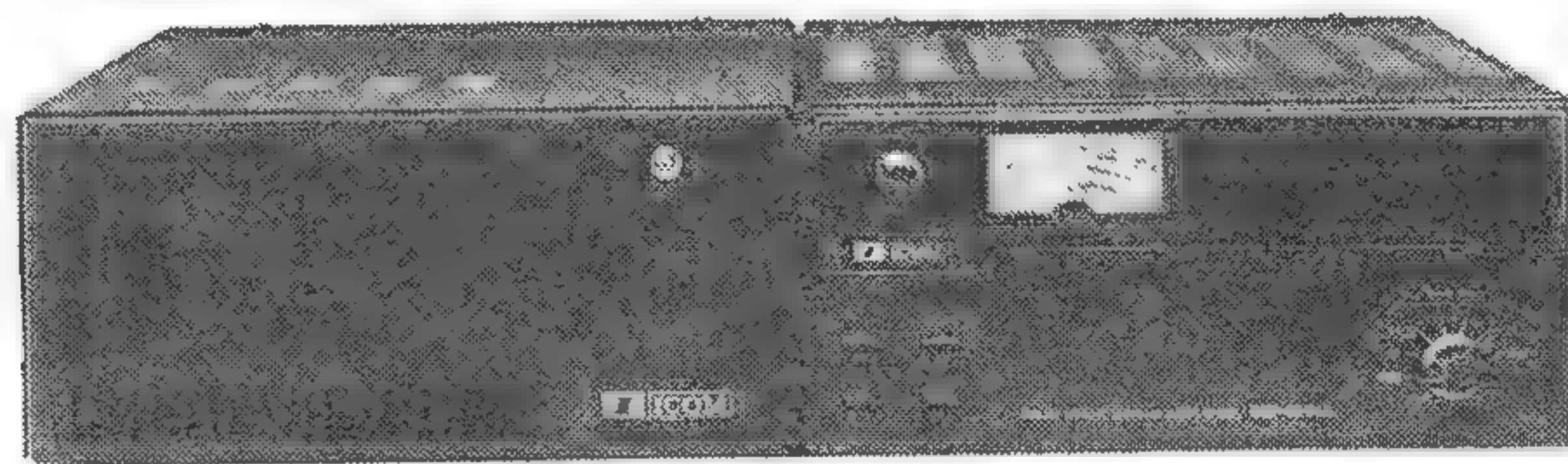
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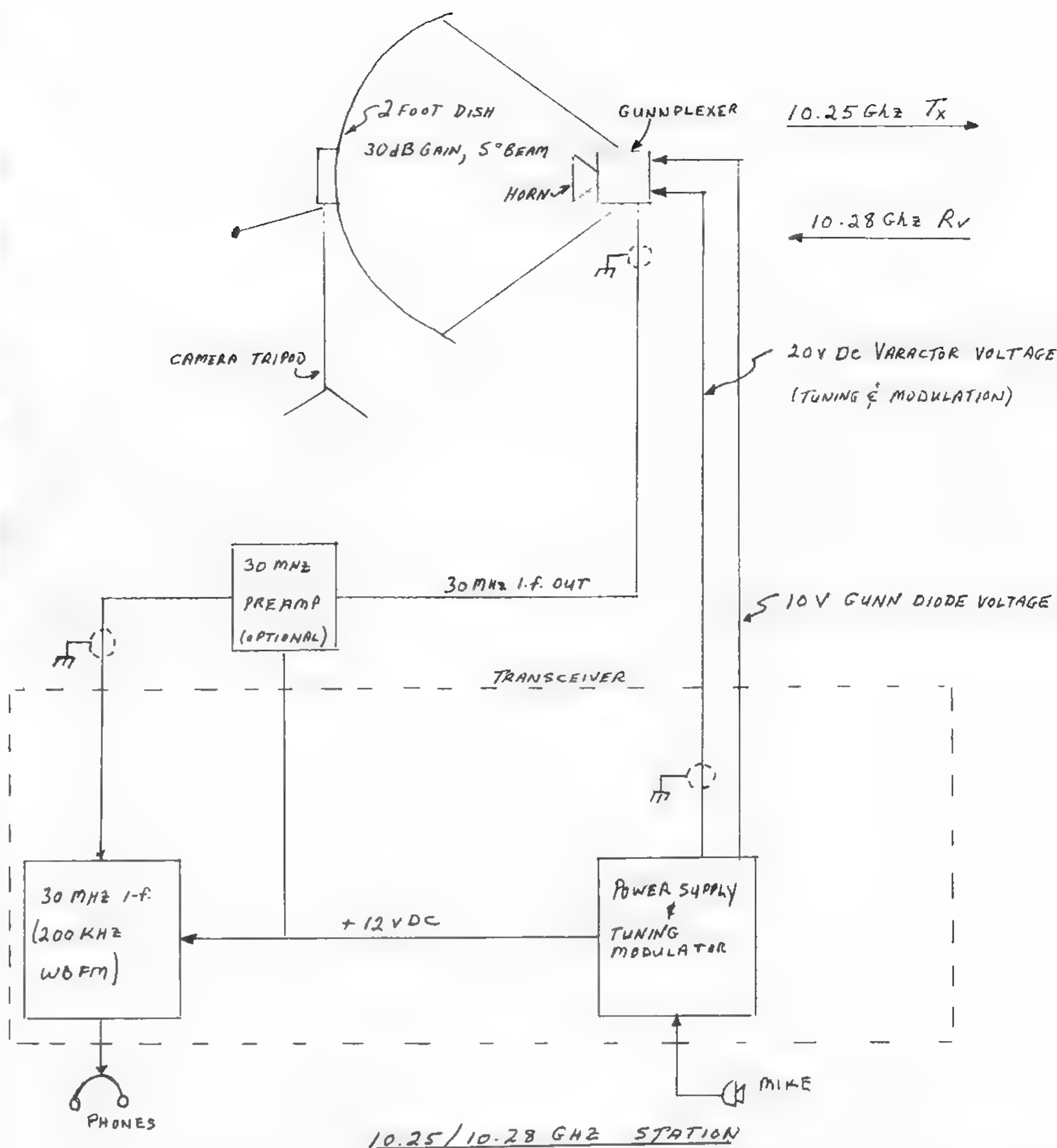
Challenges

Happy New Year and all the best for 1985. As we enter a new year, we are often prone to reviewing past accomplishments and reflecting upon them. In this regard, I was paging through some vintage ham radio magazines recently as I often do when looking for ideas for this column. It struck me that some of the past accomplishments of VHF'ers were pretty exciting. Such items as the discovery of tropo refractivity in the 1930's, the first moon bounce contacts and California to Hawaii via 2 metre tropo duct are enough to stir the heart of any VHF'er. Alas, all the good stuff has already been done. Are there any real challenges left? Don't forget, those hams didn't have fancy high tech rigs and didn't have home computers. Can there be challenges in 1985 and beyond?

How about a 160 km (100 mi) line of sight contact running 15 milliwatts? If you think that's not a challenge - that's impossible - then you are wrong. This contact was completed during the Aug. 1984 UHF contest by Michael Ross, VE2 DUB and Eric Bool, VE3AF between Mount St. Hilaire and Mount Megantic in the eastern townships of Quebec. (fig. 1), in the 10 GHz band. OK, so it's a challenge, but 10 GHz and you never heard of any gear available to amateurs operating on those frequencies. It must be specialized equipment, way beyond the average amateur. That's what I thought too, until I attended the presentation made by Michael and Eric at the 1984 RSO Convention. Sure it's not easy - that's what makes it a challenge - and fun. What is required is a lot of careful planning and hard work.

The basic 10.25/10.28 GHz station block diagram is shown in figure 2. The heart of the setup is a varactor tuned Gunnplexer transceiver "front end" manufactured by Microwave Associates. The transmit frequency is 10.25 GHz and receive is 10.28 GHz. The basis of the Gunnplexer is the Gunn diode oscillator, named after its inventor, John Gunn of IBM. The Gunn oscillator is also used to provide the local oscillator signal for the diode detector. Thus the Gunn oscillator acts as both the transmitter and receiver.

16



(figure 2)

This means that the i-f at each end of the radio link must be the same frequency and the frequencies of the Gunnplexers must be separated by the i-f.

I-fs of 30 MHz are standard for audio work in North America. Because of the Gunnplexer operation, such communication links are full duplex. That is, both ends of the link can talk and listen at the same time without throwing any switches. A 30 MHz i-f with a 200 KHz bandwidth and a power supply complete the station. An extensive discussion of Gunnplexer operation can be found in the 1984 ARRL Handbook on page 14-22.

The range of Gunnplexer systems depends upon a number of factors, including transmitter power (typically 15 milliwatts), antenna gain, path loss, receiver noise figure and desired carrier to noise ratio. All of these factors had to be considered when the team developed the plan for their equipment and radio path. To determine the path loss and the required heights for the antenna sites, a computer program (A Simple Computer Model for VHF/UHF Propagation, Preidigkeit J., W6KGN; QST, July 1983) was adapted to include a calculation of path loss. Standard tropo refractivity with a curvature factor $K = 4/3$ was used in the calculations. The path loss over the 160 km circuit was calculated to be 156 dB.

Continued on next page



Mt. St. Hilaire 1350 ft. ASL, Aug. '84. UHF Contest, 100 mile record.

The path profile is illustrated in figure 3 for the path between Mount St. Hilaire (411m) and Mount Megantic (1109 m).

The antenna employed was a 0.6 m (2 ft) parabolic dish with a gain of about 30 dB and 3 dB beamwidth of approximately 5 degrees. As you can imagine, aiming a 5 degree beam over a 160 km path requires a lot of time and patience. The following link power budget illustrates how the various system performance factors and the path calculations are utilized.

The useful FM threshold is a carrier to noise ratio of 10 dB. Thus we can see that theoretically, at least, the proposed system will work with a 24.8 carrier to noise ratio. Having designed the system on paper, the team set off for the field to set up and test the equipment and theory. Both Michael and Eric are to be congratulated on their accomplishment which is a Canadian 10 GHz record contact.

As you can see, there are still challenges to be met in the high-tech era. Perhaps you would like to challenge the 160km record set by these two amateurs. Do you think that you could do it? Or, perhaps you would like to try the world record on 10 GHz of 1033km set in 1983 by I5SNY/EA9 and IOYLI/IT0.

QUA, QUA, QUA

There is not a great deal to report in this department this month since I expect everyone was quite busy preparing for the Christmas season. However, I did receive a letter from Paul Edgley, VE3PQ regarding the computer program for grid squares which appeared in the last issue of the TOA. Paul has a similar program for his Apple clone system which he is willing to share with anyone interested. If you send him a blank diskette, he will supply you with the program or if you have a modem, he can provide it via land-line at 300 baud. His address is 120 Marilake Drive, Agincourt, Ontario M1S 1V9, telephone (416) 293-4397. Paul has been working the RS Soviet satellites and is putting up a new antenna system for 2 M SSB. Hope to hear you on 144 MHz SSB soon Paul.

I hope you had success with the Jan. Sweepstakes. Now is the time to be thinking about preparing for the spring meteor showers and don't forget to watch for some tropo during late winter thaws.

My thanks to Michael and Eric for the information on their 10 GHz record.

Please send your comments and ideas to:

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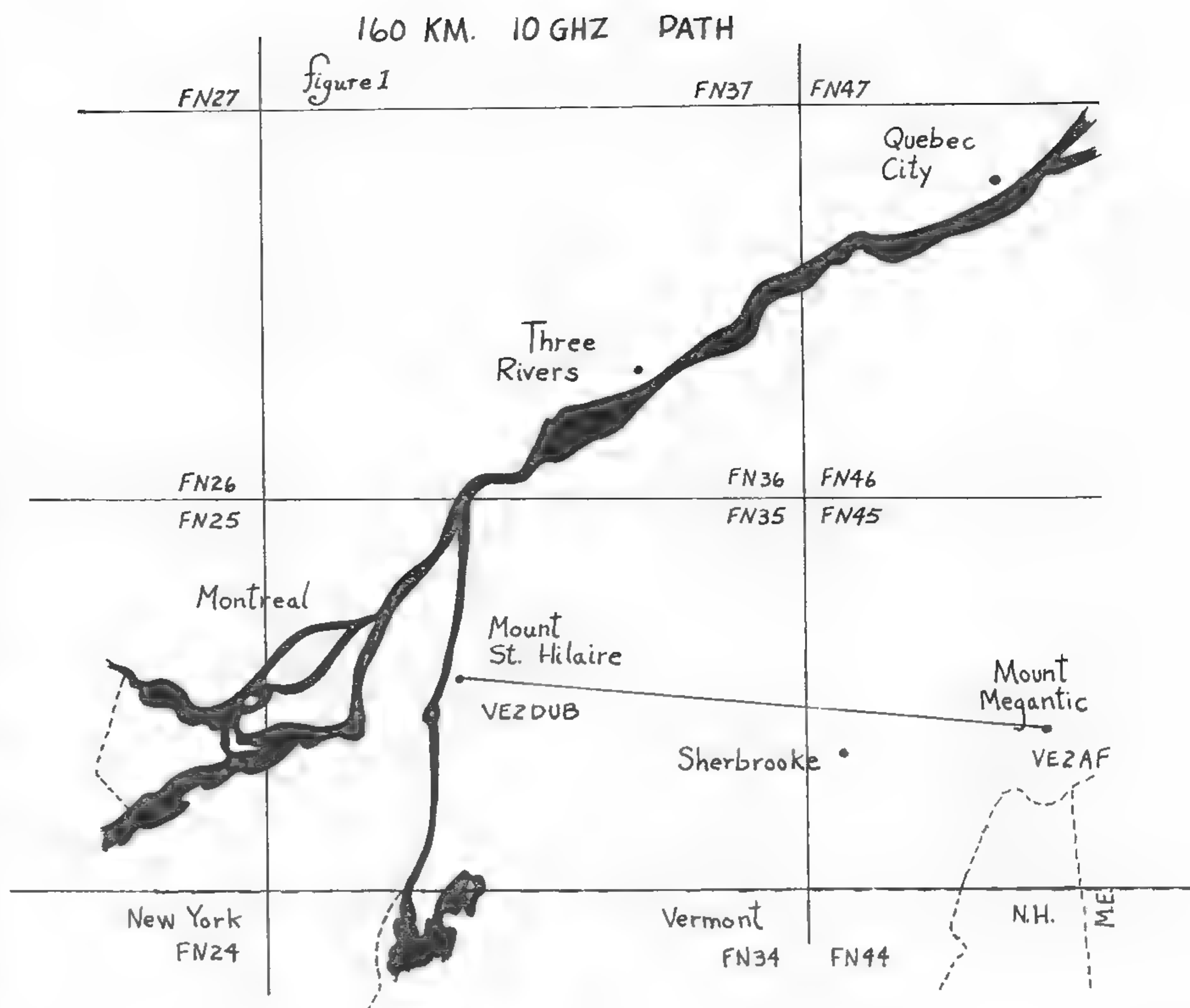
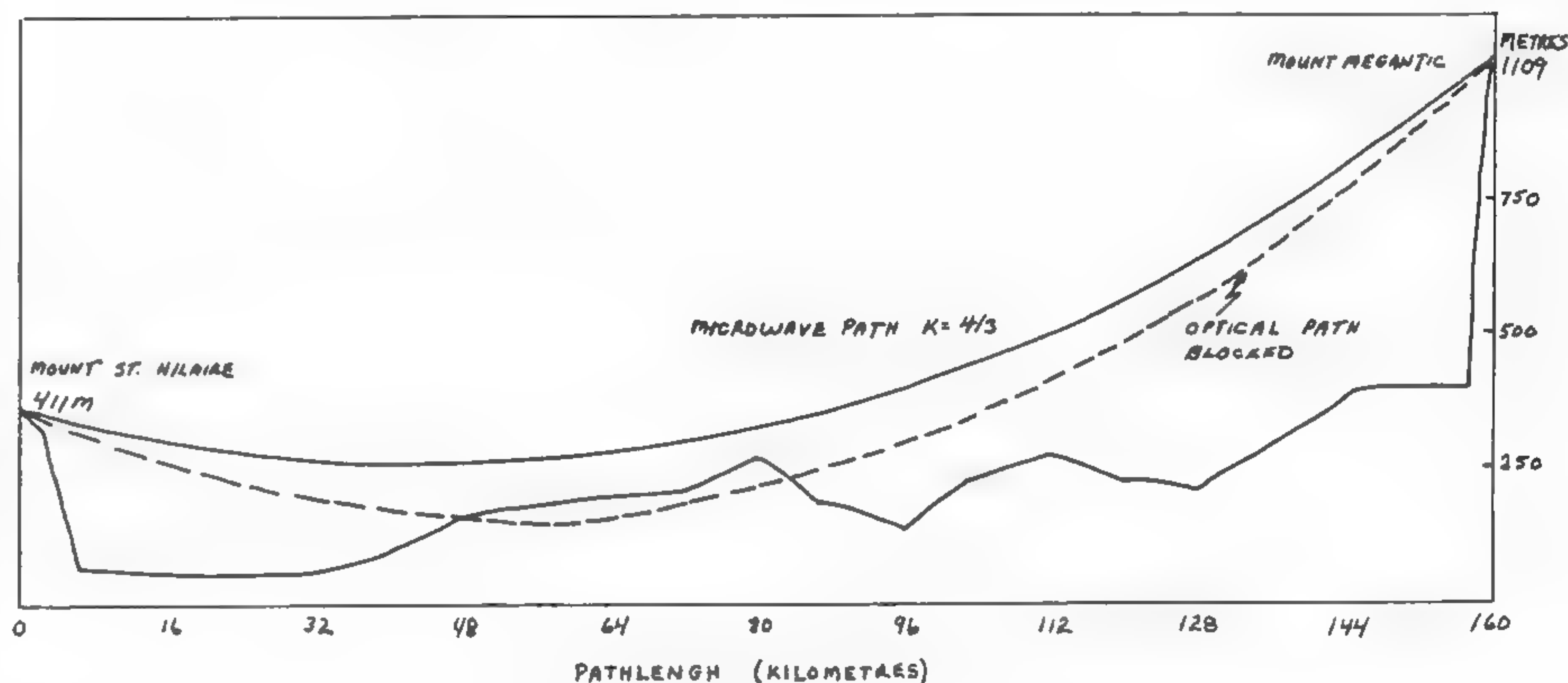


FIGURE 3
10GHZ MICROWAVE PATH MOUNT ST HILAIRE TO MOUNT MEGANTIC



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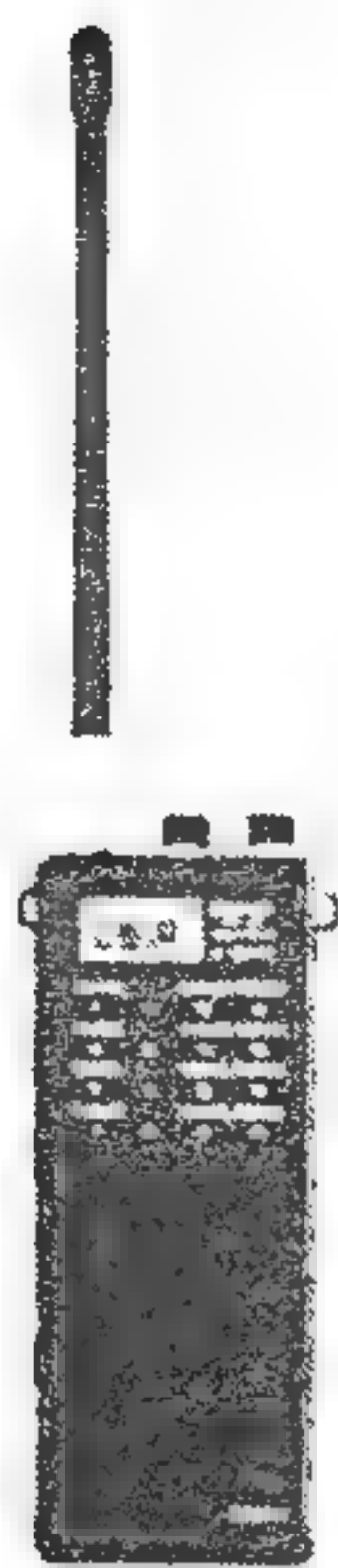
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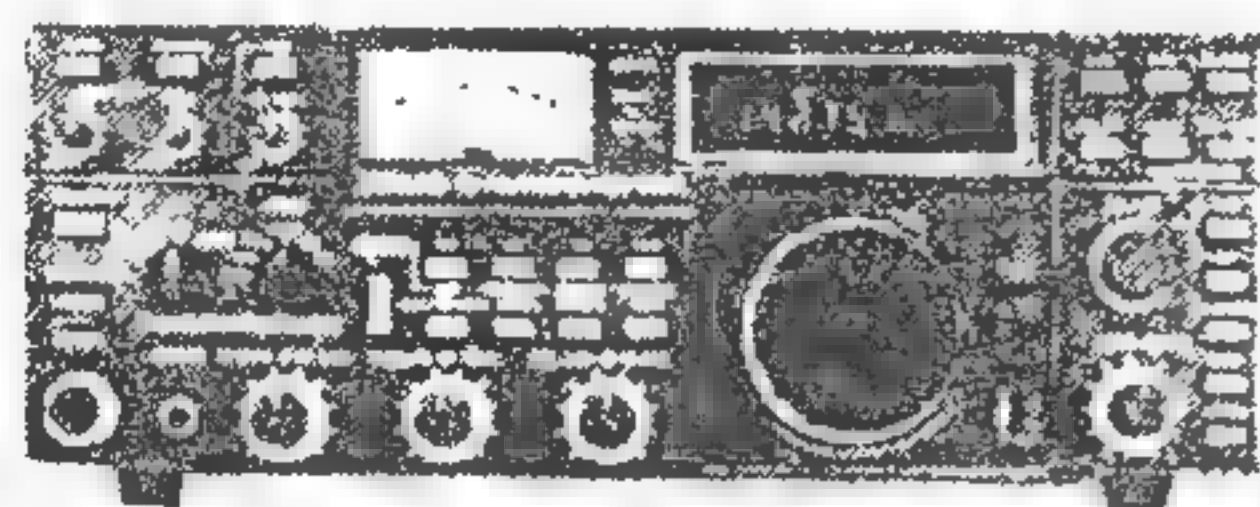
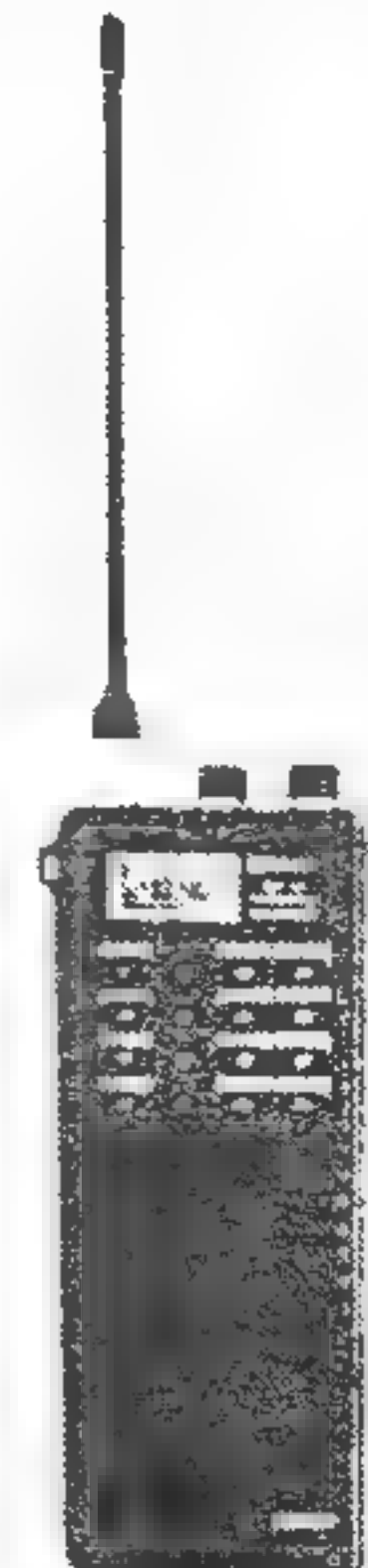
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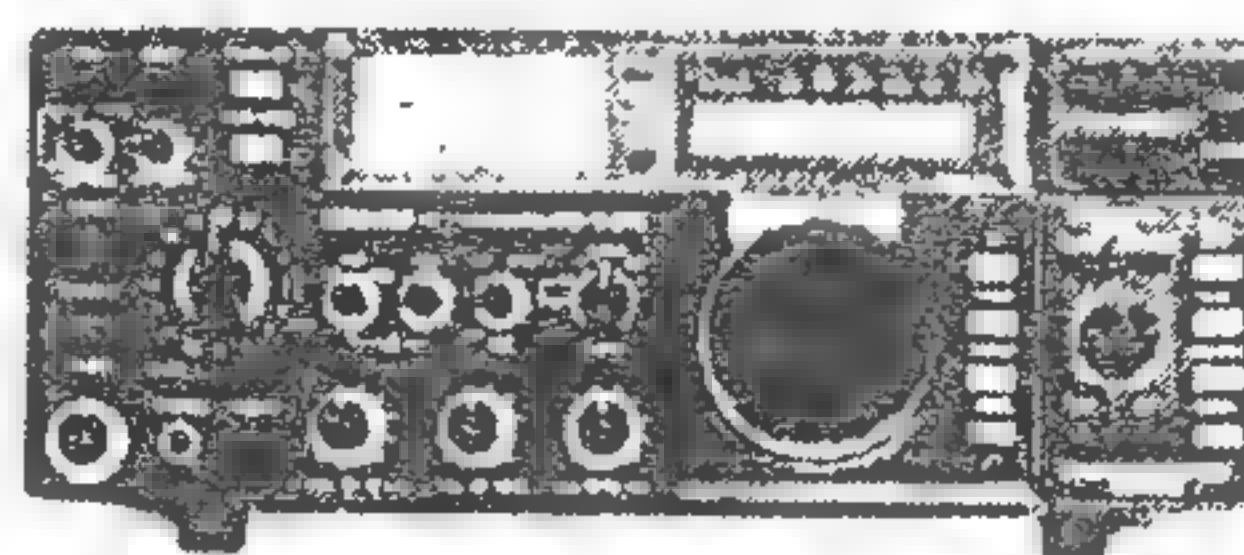
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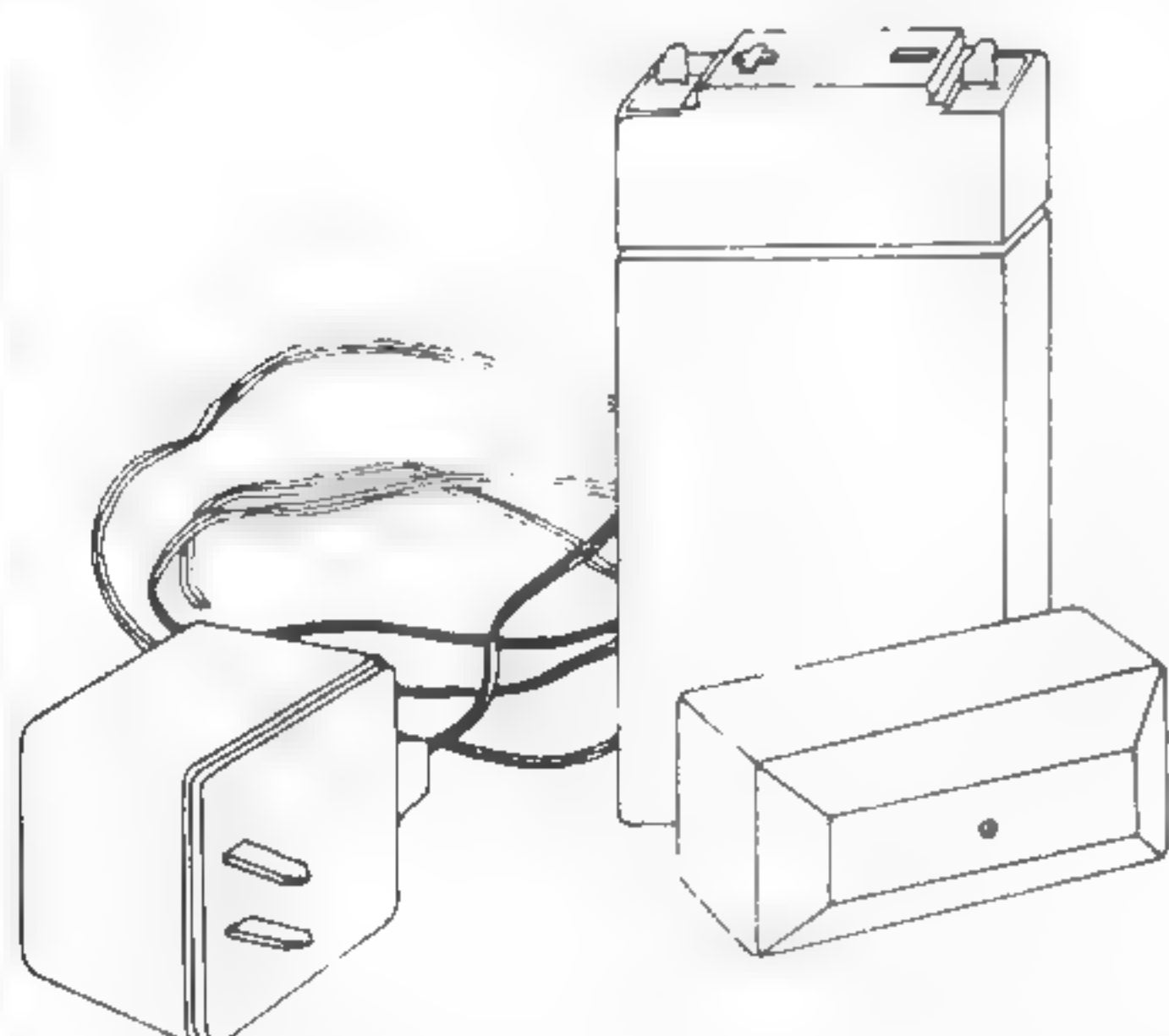


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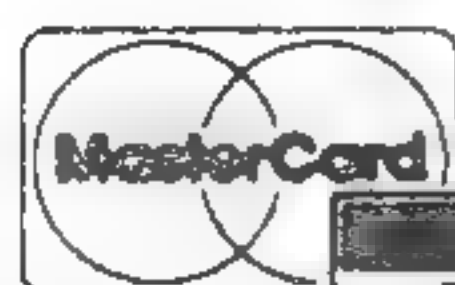
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RSO 1985 Net Directory

By Bruce Carveth, VE3BC

KEEP FOR REFERENCE

EAST

Time	Day	Net Name	Freq. KHz
0600	Dly ex. Sun.	Maritime Weather	3770
0700 to 1800	Dly	Ontars	3755
0700	Sun.	Maritime Oldtimers	3750
0800	Dly	VE2 (French)	3750
0800	Dly	Happy Gang (VE2 Whitecane)	3765
8088	Dly	Professional Loafers	3787
0830	Wed.	Minnie (Whitecane)	3765
0900	Sun.	QCWA	3773
0900	Sun.	North Bay ARC	3768
0930	Sun.	Georgian Bay ARC	3783
1000	Dly	COMSONT	7074
1000 to 1700	Dly	Trans Provincial	7055
1000	Sat.-Sun.	Ottawa Pot Hole	3760
1000	Sun.	Skywide ARC (Toronto)	3740
1030	Sun.	Nortown ARC (Toronto)	3770
1100	Sun.	London ARC	3750
1100	Sun.	West Side ARC (Toronto)	7073
1300	Sun.	QCWA	7090
1300	Sat.-Sun.	Trans Canada	14140
1400	Tue.	CLARA	14160
1600	Sat.	Ontario Trilliums	3770
1600	Dly	Professional Loafers	3787
1700	Dly	VE2 Whitecane	3765
1700	Dly	VE2 (French)	3750
1800	Dly	Maritime	3750
1830	Dly	CJ (Chicken Junction)	3775
1845	Dly	Laurentian	3755
1900	Dly	Ont. Phone	3770
1930	Dly	Quebec Radio	3775
2000	Wed	White Caners	3765
2015	Dly	Northwest Ont.	3750

Time	Day	Net Name	Freq. KHz
1600	Dly	Ont. Southern	7045
1815	Dly	Grey Bruce (Slow)	3645
1830	Dly	Grey Bruce	3645
1900	Dly	Ont. Southern	3667
1900	Dly	Atlantic Provinces	3654
1945	Dly	Eastern Canada	# 3652
2130	Dly	Eastern Canada	# 3652
2200	Dly	Ont. Southern	3667
2200	Dly	Grey Bruce	3645

Alternate frequency 7040

80-Meter DX Operating Practices

AREA	CW Section	Phone Section	Phone DX
Africa (most countries)	3.500-3.600	3.600-4.000	3.790-3.810
Argentina, Chile	3.500-3.750	3.600-3.750	3.740-3.750
Asia (most countries)	3.500-3.600	3.600-4.000	3.790-3.810
Australia	3.500-3.600	3.600-3.700	3.690-3.700
Canada	3.500-3.725	3.725-3.999	3.750-3.800
Europe (except USSR)	3.500-3.600	3.600-3.800	3.790-3.800
Greece	3.500-3.600	3.500-3.600	3.590-3.600
India	3.650-3.700	3.650-3.700	3.675-3.700
Japan	3.500-3.550	3.550-3.575	3.793-3.803
New Zealand	3.500-3.600	3.600-4.000	3.775-3.825
South America (most countries)	3.500-3.600	3.600-3.999	3.775-3.800
USA and territories	3.500-3.775	3.775-3.999	3.775-3.825
Marshall Islands	3.500-3.900	3.800-3.999	3.800-3.825
USSR	3.500-3.600	3.600-3.650	3.640-3.650

TNX to DX Report -- reprinted from the
SCDXC Bulletin 11-2-84. Send for free
sample:

Alan Leith
10 Fairington Cres.
St. Catharines, Ont. L2N 5W5

What's a sure way to double your money?

Fold it

A Ham Radio Tower

Why do people get upset when one
puts up a radio tower? A few things in
its favor:

IT DOESN'T:

Squeal its brakes
Screech its tires
Blow its horn
Roar its motor
Slam its doors at ungodly hours
Shine its headlights in your bedroom
window
Nor does it backfire.

IT DOESN'T:

Bite you
Bark or meow
Leave deposits on your property
Dig up your garden
Scratch on your door
Widdle on your trees
Nor does it dig into and scatter your
Garbage.

IT DOESN'T:

Drop leaves that you have to clean up
Grow branches over your house
Drop fruit or nuts which block your down
pipes
Block your view like a tree or a building
Grow roots that damage your walk or
driveway
Nor does its roots plug your drains.

IT DOESN'T:

Have boisterous parties
Or play loud music
Or have swimming parties through the
night
It doesn't ring your phone (accidently?)
Nor does it ride bikes across your lawn.

IT'S JUST QUIET,
AND HAS NOTHING TO SAY

KEEP UP FOR NEIGHBOURS VE7BJ

HAMFESTS

Niagara Peninsula ARC

February 2, 1985, 8:00am to 2:00pm,
UAW Hall, Bunting Road, St. Catharines.
Monitor VE3NRS 147.240 or 146.520 sim-
plex. Dinner & Dance at 1830hrs. \$15.00
per person. Lots of fun and good fel-
lowship, door prizes. Contact VE3DSW,
Peter Mitroff, (416) 935-6732 for more in-
formation.

Rochester, NY

May 17, 18 and 19, 1985. Flea Market
will open at noon on Friday, May 17 and
remain open to 1:30pm Sunday, May 19.
For more information, write to:
Rochester Hamfest, 300 White Spruce
Blvd., Rochester, NY, USA 14623.

Dayton, Ohio

April 26, 27, 28. Hara Arena and Exhi-
bition Centre, Dayton, Ohio. This is the
BIGGEST of the year. For more infor-
mation, wrtie to:

A slide presentation with cassette
show is available for your club. From
DARA, Box 44, Dayton, Ohio, USA,
4501, or phone (513) 433-7720.

Jocelyn Lovell

Dominion Tapes Update

Grand Total as of Dec. 31, 1984
\$327,268.36 -or- \$688.99 Credit

December Breakdown

Scarborough ARC.....	\$2,761.55
Chatham-Kent ARC	
(Bell Pioneers).....	13,681.47
Nortown ARC	2,180.31
Metro ARC	2,878.60
Thornhill ARC	6,147.07
Northshore ARC	17,212.16
Ministry of the Environment	
(per VE3NAH, Roger Clarke) .	10,102.06
Lady, Cancer patient,	
Neighbour of VE3BWF	
and XYL	24,671.40
Individual Amateurs and	
Friends.....	7,612.95

Total Tabulation Dec. only ...\$87,247.57
Dominion Credit 183.68

The above grand total (\$327,268.36 in tapes) which is 688.99 in Dominion Cash Credit, when added to the Jocelyn Lovell Trust Fund which the Thornhill Radio Amateurs' Club has opened for Jocelyn, and contains \$316.00, means that we now have a total of \$1,004.99 set aside for Jocelyn. Anyone wishing to send a cheque for Jocelyn, may make a cheque out to the THORNHILL RADIO AMATEURS' CLUB, Jocelyn Lovell Trust Fund and mail it to Libby Stevens, VE3IOT, 21 Ida Street, Thornhill, Ont. L3T 1X4.

Jocelyn does not at this time, require a wheelchair, but he has expressed a wish for radio equipment instead. He hopes to start studying for his license soon after he gets moved into his 'new' renovated house this winter.

An excellent documentary on Jocelyn was aired on the CBC programme, *The Fifth Estate* in December. Libby has a VHS video tape of the programme, 30 minutes in length, if any club or individual wishes to borrow it. It is an excellent insight into Jocelyn, the person, his extreme courage, perseverance and determination to succeed in spite of his quadriplegic disability.

FOOD CITY TAPES FOR JOCELYN LOVELL

As of December 31, 1984

The Food City Stores will credit us with \$1.00 for every 350.00 worth of tapes. A small number of amateurs have been sending in Food City tapes. Please keep them coming, as they will come in very handy for such items as antenna wire, connectors and other accessories.

Scarborough ARC (October)	877.51
Scarborough ARC - December ..	846.12
Assorted Individuals	1,468.17
Thornhill ARC	108.12

Grand Total as of
Dec. 31, 1984 \$3,299.92
or \$9.43 Food City Credit

Pam Gorman

VE3BVG

A tribute

Pam became a silent key on Nov. 13, 1984. She passed to rest at her home. She had been suffering from many complications for at least the past three years.

Pam was licensed in 1974 and was a staunch supporter of the 'Open Line Net' on RPT every evening at 6:30 p.m. She served as assistant to Mike, VE3GFN for several years and enjoyed hearing her many friends. Even when she was too ill to check in, she loved to listen. She leaves her OM Bob and son Tony, VE3 NT in Hamilton and daughter, Wendy Sirkin and Christopher. Pam was grandmother to seven grandchildren and great-grandmother of two, Jeanette and Michael. A family service was held following the cremation.

Pam and OM Bob took care of the 'D' file for the QSL Bureau for many years. They have been very faithful servants ever since the Trilliums took over the VE3 Bureau. Bob says he will still carry on with this file.

Our sympathy is with you in your time of sorrow. She is a loss to the Ontario Trilliums also.

Tot No. 106.

Editor's note: Just informed about the passing of Pam's OM Bob.



Dear readers:

It is with a great deal of sadness in our hearts that we report to you on the untimely passing of our very own, dearly beloved Ann Tenna.

Ann left last week for a little trip back to Africa. It seems she had met an interesting native on her last trip there, and he had invited her to return at a later date for dinner. Poor Ann never realized that the native was a cannibal and she (poor dear) had no way of knowing that she was not to be a guest - but was, in fact, the main course.

She will be sadly missed by all who read her words of wisdom. Who else had her vast experience, and the knowledge to guide us so well? Where can we now turn for help as we trudge through life? Who will "NEWCOMER" be able to write to with his weird problems?

However, we must be strong in our time of deep sorrow, and carry on as best we can. I know that Ann would have wanted it that way!

Ed

Ministry of Transportation & Communications

FEE STRUCTURE FOR AMATEUR RADIO OPERATORS NUMBER PLATES

The fees for Amateur Radio Numbered Plates (VE3-XXX) are as follows: New issue Amateur Radio Plates: \$25.00, replacement of existing plates: \$10.00.

The Ministry is not legally empowered to refund the difference in fees to those Amateur Radio operators who have already paid the former, higher fees (\$100. & 25.) for such plates and NO REFUNDS CAN BE EXPECTED.

WANTED
NEEDED DESPERATELY
A NEW OR USED ELECTRIC
TYPEWRITER FOR THE TOA EDITOR
on a 99-year-lease.
Beg, borrow or whatever.
If someone has one collecting dust
and wishes to lend it to the RSO,
we really would appreciate it.

AUSTRALIA BUYS CANADIAN COMM GEAR

The National Road Motor Association (NRMA), Australia's largest automobile club, is installing a mobile digital communications systems, supplied by Mobile Data International Inc. (MDI), Vancouver.

MDI is working with prime contractor Plessey Australia to provide a turnkey computer dispatching system for NRMA's mobile radio network.

"When it's stormy and wet, the NRMA has as many as 400 service vehicles on the road," says James Dodds, MDI's international marketing manager. "They want more efficient communication for peak periods. A voice dispatch can tie up a channel completely for minutes, but digital dispatch can be sent in less than a second, error free, to any unit or group of units."

When an NRMA member calls in for help, the dispatcher will send a work order to a specific service vehicle, where it will arrive with a beep at a dashboard-mounted terminal the size of an ordinary car radio. The message will appear on the terminal's two-high-temperature liquid-crystal display or be stored in memory until needed.

When the job is complete, the driver will fill in the blanks on the electronic work order and transmit it back to the control centre. Dispatchers will also be able to compose and transmit text messages.

NRMA supervisors will use a more sophisticated terminal that provides a five-inch, 320-character video display and a complete typewriter-style keyboard. They will use the keyboard to compose and transmit messages to dispatchers or service vehicles.

What is RP?

Retinitis Pigmentosa is the name of a baffling and mysterious group of hereditary diseases that affect the retina, the film-like visual layer in the back of the eye. The retina slowly degenerates and loses its ability to transmit pictures to the brain.

The first symptom is often night blindness, followed by narrowing of side vision until the patient has what we call "tunnel vision." Eventually, in most instances, the tiny window of light shrinks and vanishes. Sight is gone.

Because your retina is attached to the optic nerve, surgery or transplants are impossible.

There is no known treatment that can stop or cure RP.

WHO DOES IT AFFECT?

RP most commonly strikes children and young adults. Symptoms have been known to appear in children as young as one or two years of age. This can result in severe loss of vision early in life.

Retinal degenerative disease can commence in youth but also may start in middle age. Once it has started, loss of vision continues for life.

HOW IS IT TRANSMITTED?

RP is an inherited disease, transmitted by a gene which may be recessive, dominant or sex-linked. It is estimated that one person in every eighty carries the gene for recessive RP. This means RP can strike without warning in a family with no previous history of blindness. At present, it is rarely possible to detect the carriers.

The dominant gene usually appears in every generation. A person with this type has a high risk of having an affected child with each birth. The sex-linked type is transmitted by female carriers to sons. In these cases there is a 50% chance of having an affected male.

WHAT IS BEING DONE?

The National RP Foundation of Canada was created in response to the tragedy of young people going blind from a disease that was practically unheard of a few years ago. The Eye Genetics Clinic at the Hospital for Sick Children in Toronto has discovered that RP is the most common disabling eye disease they encounter.

The Foundation is spearheading research across the country directed at learning more about retinal degenerative diseases: research aimed at discovering what changes in body chemistry, anatomy and function occur in disease and what can be done to stop it.

Led by Dr. Clement McCulloch, Chief of Ophthalmology at the University of Toronto, Canadian scientists are committed to research programs at universities and hospitals across the country — in Calgary, Ottawa, Montreal and Toronto.

Our effort is linked with the work of dedicated scientists in other parts of the world. In Boston, at the Massachusetts Eye and Ear Infirmary, the American RP Foundation is sponsoring studies to seek a way to treat the disease that takes the sight of so many people each year.



Vince (centre)

VE3NYH

Vince of Welland, Ontario

Vince is a very active blind amateur radio operator located in the city of Welland (which is about in the centre of the Niagara Peninsula). Vince attended the first meeting of the National Retinitis Pigmentosa. The Niagara Region Chapter was the first chapter established in Canada. Vince also informs us that the foundation engages in public presentations.

If you would like any additional information, please write to:

Niagara Region Chapter,
Box 381, Welland, Ont. L3B 5P7
or call:
(416) 734-7994.

What do you call a cow with no legs?

Ground Beef.

Attention White Caners

All W.C. are invited to participate in the making of an audio tape which will tell about that person.

This idea was originally suggested by Gordie, VE3CJJ. Gord of Napanee, and a group of interested hams are endeavouring to accomplish this. Please spend a couple of minutes telling us some of the hi lites of your life (other than amateur radio). Tell us about your family, your other hobbies, schooling, age, etc.

Please use a C-60 cassette. Start with your name, your call and the date, then mail it to:

R. DUNN, VE3ATK
RR6 Woodstock, Ontario N4S 7W1
For further info, contact Ding, VE3ATK or Cliff, VE3LSJ.

Notes from the Log of VE3AFA

Terrible intermittent somewhere in my antenna system...Double-checked and it is not in my xmitr ... **Must** be in antenna connections on tower ... Very hot summer day so all neighbours in their garden watching curiously as I proceed awkwardly up tower with pockets loaded with tools, connectors, etc. ... Ruth posted at base to fill shopping bag on rope with items forgotten as they are needed ... Many cries of encouragement from neighbours now ... Wish they could mind their own business ... Both hands busy, busy, busy, but belt tied securely as I reach overhead and separate antenna into two parts at dangling centre connector, holding unattached ends one in each hand high in sky above ... How to get tool out of pocket? Impossible manoeuvre, I decide ... Impossible until I connect up antenna again and free one hand at least ... WOW! Something coming LOOSE! ... Down below, that is, around my KNEES! .. Something has slipped, something has slipped! ... Holy smoke, it's my trousers! ... Can't let go with either hand or whole business will go down ... Antenna that is, but pants too! ... Ruth laughing her head off ... neighbours laughing now too, darn them all ... Calling out something about getting a picture fast ... Can't climb down one rung even if I wanted to. Not while I'm hobbled by those trousers! At last I get connector back on without dropping wire (unlike pants) ... Throw all tools to ground and finally manage to raise trousers enough to climb down, but very ungracefully, having accomplished absolutely nothing at all on the tower (at antenna level, that is) ... Back in shack and wiggle-wiggle coax where it goes into PL259 behind the rig ... YEP! That was it after all! A bad solder joint behind the SB101 ... Neighbours all tell me ham radio appears to be a real ball but I don't know where they get such an idea ... End of entry in log.

Editor's note: Still on the floor Fred? (hi) ... And this is a "Family Magazine." You're lucky I'm not a cartoonist!

Guess Who?



Dave, VE3FOI, about 35 years ago this winter (hi).

Club News

Algoma ARC Sault Ste. Marie

NICE TO HEAR AND RECEIVE THEIR CLUB BULLETIN. Looks like they are looking into a Wintario Grant for their club activities. Also a New Horizons Grant made possible the club station VE3SCA (Senior Citizens of Algoma). It was officially opened on Dec. 8 at the Bay Street Drop In Centre. VE3's CRD, KOY, DG, BPS, EGC helped out and are responsible for this fine business grant. HOW ABOUT A PICTURE GUYS???

South Pickering ARC

Congrats to VE3NBE Ray Koson who is the 1984 Amateur of the Year for the South Pickering ARC. Ray has been active in the club since joining the code and theory class back in 1980. He regularly attended club meetings even before attaining his license and has always been a strong supporter of club projects and activities. After attaining his license, Ray didn't hesitate to join the up front boys and became their secretary in Nov. '81, followed by two years as Chairman of the Board (President). After stepping down from the BIG chair, Ray has not ceased to support the club. He is now in charge of public relations. You just can't keep a good guy down.

Congrats also to VE3HUG Brenda Davies (OM is Brent, 3EJW) who has received the Ontario Bicentennial Medal. This was granted to Brenda for her outstanding volunteer work in this community (Pickering). Brenda was co-founder of the Ajax Pickering branch of the Red Cross. Brenda is now regional chairperson for the four Red Cross branches in Durham region.

Peterborough ARC

Sad to hear about the vandalism with your club trailer. Hope it gets fixed up O.K. The PARC helped out with the local Santa Claus Parade. Everything went smooth as far as radio was concerned... a couple of lost people, but they were located O.K. Those that helped out were VE3's KXB, CRT, MCC, MT, IQZ, APA, NBO, ACD, NLB, SG.

Welland County ARC

Plans under way for this club's Annual Dinner Dance on March 2, 1985, in Welland, Ont. The club has ownership now of VE3WCR repeater 147.30 MHz. Dave 3EOQ, Len 3BGH have been working on the phone patch.

Oakville ARC

This club didn't sit around during the holidays. They were active helping out with the local Christmas Bureau. Also, Christmas greetings were collected from various senior citizens' homes and passed via the NTS. by members of the Oakville Club. This is always appreciated and a good idea for all clubs to get involved with. Looks like Bill, 3HGJ, is back at his old home QTH now. Let's have a story from you Bill. On Feb. 7, Fred Hammond VE3HC, will be the Guest Speaker talking on his trip to China.

Niagara Peninsula ARC

Everything all set to go for the 7th Annual Hamfest and Dinner Dance on Feb. 2. Also this March will see upwards of 6,000 athletes invading St. Catharines for the Ontario Winter Games. NPARC members and anyone interested will be helping out with communications for this event. Also a special HF station with a special prefix will be on cw, SSB, RTTY 160 to 10 meters. A very picturesque QSL card will be sent to all who contact VE3 VM. This will all take place during the spring break, March 14 to March 17, 1985. If you are in the area, drop in - monitor VE3NRS 147.240.

Brantford ARC

Nice to receive your club bulletin, the **BA Monitor**, real sharp. Keep it coming. This club entered the Brantford Santa Claus Parade with a float and won 3rd prize. (Let's have a picture of it).

Their club repeater, VE3TCR, has some new equipment. The old reliable has been retired with distinction. The new one is a new Hamtronics, located in the Federal Building (nice work guys). A new Sinclair Radionica Antenna will really "TOP" it off, so to speak.

Oxford County ARC

This club helped out with the Goblin Patrol on October 31st. The OPP asked for assistance to help patrol the rural areas of Tillsonburg. Reasonably quiet time was had by all. The following gave of their time and gave up trick or treating for themselves (hi): Cliff, 3ANN; Bob, 3LDU; Bill, 3KST; Dale, 3JFB; Ludwig, 3GHW and Cliff, 3LSJ.

The Goblin patrol used VE3OPP, nad Bob, 3LDU, has special QSL cards for all who helped out. Congrats people. Sounds great. Keep it going.

Chatham Kent ARC

Nice to see your bulletin come my way. The President is VE3NGG, Cliff Russell, keep the info coming Cliff.

Ottawa ARC

RSO CONVENTION PRIZE WINNERS:

1st
TS-430 HF Transceiver and
Power Supply Stan White, FKD

2nd
IC-27th VHF
Mobile Transceiver Mailes Dier, AP
3rd
FT-203R VHF
Handheld Transceiver Doug Griffith, KKB

4th
Desk Top Printer Kick Lanting
NON-AMATEUR PRIZES:

1st
G.E. Microwave
Oven Dave Parks, GSA

2nd
Weekend for two
Westin Hotel Mary Cooper

The Groundwave really looks fine in the new format!

Keep your Club Bulletins coming Editors ... Please send directly to me, Dave, VE3FOI, for faster service. (See address on page 3).

C.A.R.F. News Service

ATTENTION PREFIX HUNTERS:

LETHBRIDGE ALBERTA AMATEURS CAN USE VX6 TO CELEBRATE ITS 100th ANNIVERSARY FROM JULY 14 to JULY 27, 1985.

To help celebrate the 75th Anniversary of the Royal Canadian Navy, navel personnel, both active and reserve, can use the prefixes: VC for VO, CF for VE, CY for VY from April 1st to May 31st, 1985.

Plans underway for other special prefixes for the 200th Anniversary of St. John New Brunswick, The Ontario Winter Games.

More information will be given as soon as we have received it.

THE CARF AND T.C.A. magazine have had major computer problems. It seems a backhole operator cut a telephone cable to the head office in Kingston and this upset the "Applecort" (hi). If you haven't received your copy of past T.C.A. Magazines, please let them know in Kingston, with your name, address, CARF membership number and last issue received. The November and December 1984 issues were to be mailed together in December, 1984.

VE3AHU - Art Blick has recovered from an automobile accident and is not resuming his duties as General Manager of CARF. Nice to hear you have recovered Art.

FCI??? A new form of RF interference has surfaced in Ottawa. It could be called "FCI" or Furnace Control Interference. The neighbour of an Ottawa operator was somewhat puzzled to find that his newly installed super duper electronically controlled home heating system kept going on and off for no apparent reason. To add to the weird doings, the same happened to his fancy micro-controlled microwave oven, plus weird noises in his electric organ. The Ottawa ARC EMI committee is working on this.

Ontario Winter Games VO3OWG Special Event Station

The Niagara Peninsula ARC have been asked to supply the necessary communications for the up and coming Ontario Winter Games to be held during Spring Break (March 14 to March 17, 1985). There will be 16 different sporting events at 14 locations throughout St. Catharines. Communications will be on two meters simplex plus some repeater activity. If you would like to help out or are coming to the Winter Games, please get in touch with the Amateur Radio Chairman, Dave Digweed, VE3FOI, 12 Frederick Street, St. Catharines, Ontario L2S 2S2 or phone (416) 684-7903. The NPARC are also planning to have a special event high frequency station on cw, RTTY and SSB 80 to 10 meters depending on conditions. Hopefully a special prefix will be granted for this event.

Pse QSL via VE3FOI

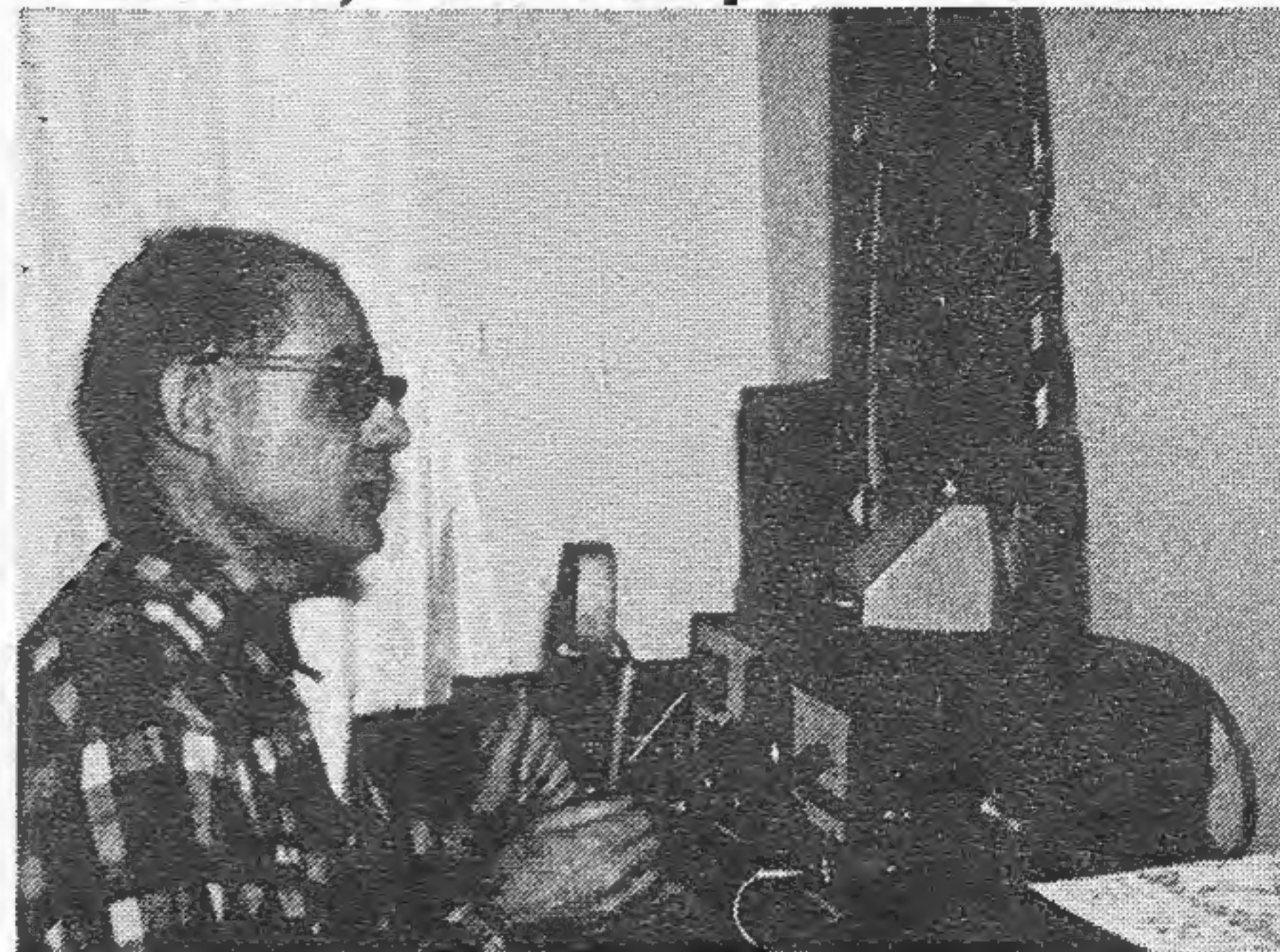
NEW HORIZONS



VE2LI, Ted, left, presenting a plaque to Bill, 3CO on his 80th birthday. Hope you have many more Bill.

The Ham Shack at the CNIB is now rejuvenated - painted, that is. Queries received since December 20th will be answered as soon as possible. Coffee and cake will be served on January 32nd.

VE3KFY, Tom Philpott



Here's Tom at his operating desk using his HW 12 and R.P.R.

Born and raised in Brockville and graduated from B.O.S.B. in 1953. Speaker Technician R.C.A. Victor in Prescott 1953-1977. Licensed 1978 after a 3-month amateur radio course at St. Lawrence College, Brockville.

Now using HW12 and TS130S with dipoles 80 thru 15 both C.W. and Fone. Nephew of Ernie, VE3FJP of Kingston. Sponsor, Bill Fretwell, VE3CCT. Has controlled W.C., D.J., Ontario Nets and F.D. Activity. Vice President of Brockville ARC. Bowling Member of local CNIB Team.

WE NEED ASSISTANCE

In the last issue, I listed the names of the white caners who would appreciate a little help - neglected to include the phone number, call sign, address, etc. Here are more details:

Robert Just, VE3GYM, CNIB residence, 1929 Bayview Ave., 481-0625.

Ray Carter, VE3HMM, CNIB residence, 1929 Bayview Ave., 451-6128.

Bob Fenton, VE3OXF, 65 Deerbrook Trail, Agincourt, M1W 1V3, 496-1352. Pharmacy-Finch area - lives with parents. Student at Brantford - returns weekends.

Louise (VE3AUZ) and Norm (VE3ANS) Konyar, 216 Bessborough Drive, Leaside, 481-7388.

Gerald (Gerry) Kavanagh, VE3001, 960 Pharmacy Ave., Scarborough, M1R 2G4, 752-3028. House-wife, children.

John Cadieux, VE3MRH, 95 Tobermory Drive, Apt. 2516, Downsview, 667-9562.

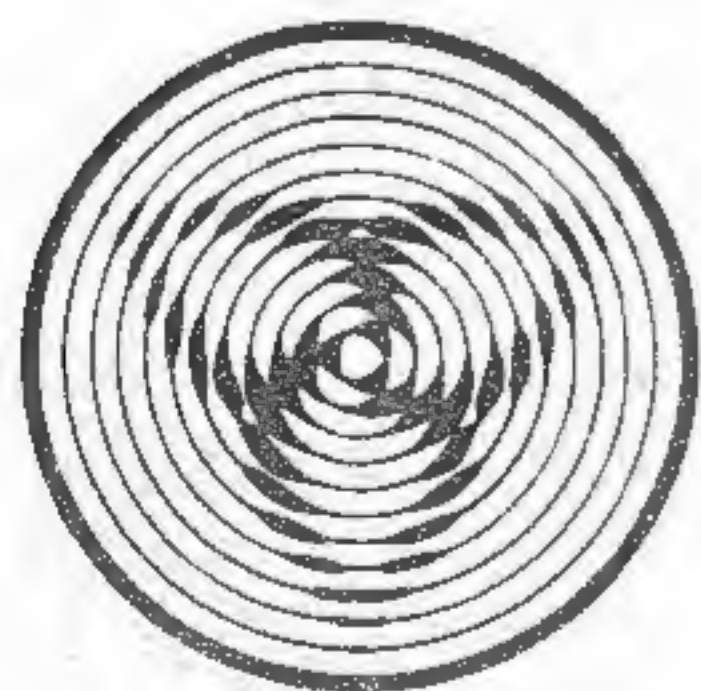
Jack Jarvis, VE3COU, 112 Eaton Ave., Toronto, 461-4445.

Murray McCardle, VE3GZQ, 42 Freeman Ave., east of Warden & north of Kingston Rd., Scarborough, 691-9958.

Stan King, VE3ARK, No. 11 Nobert Rd., Victoria Park & 401 area, 493-2787. House-wife, 2 boys ages 17 & 19.

Merv Cottle, VE3HVH, Bleeker Street (High Rise) 920-9773.

73. Fred Roberts



This space is made available to the C.N.I.B. A.R. Program through the courtesy of

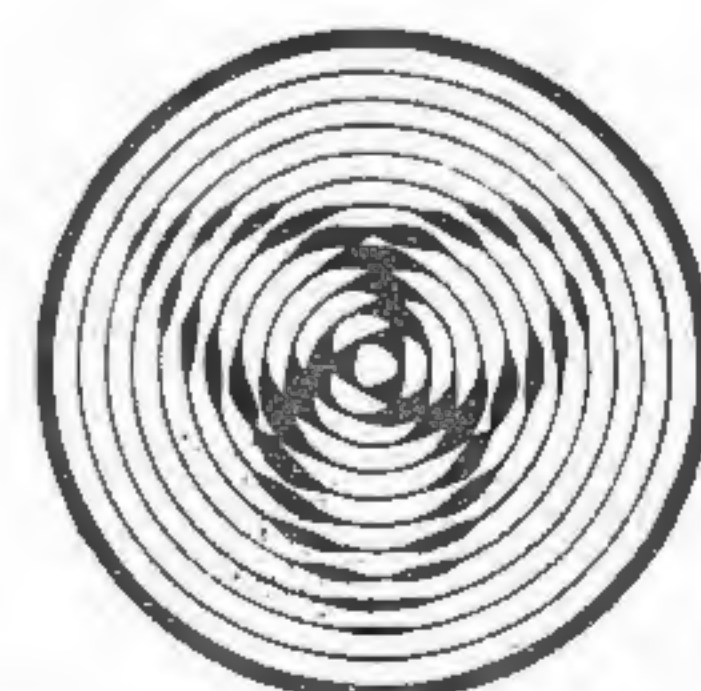
RADIO SOCIETY OF ONTARIO

P.O. Box 246, Port Credit Postal Station, Mississauga, Ontario L5G 4L8.

THIS SPACE AVAILABLE FOR YOUR ADVERTISEMENT.

Please help support the CNIB Amateur Radio Program.

Contact Fred Roberts, VE3AFA, 468-2674 (a.m.), or 221-9252 (p.m.).

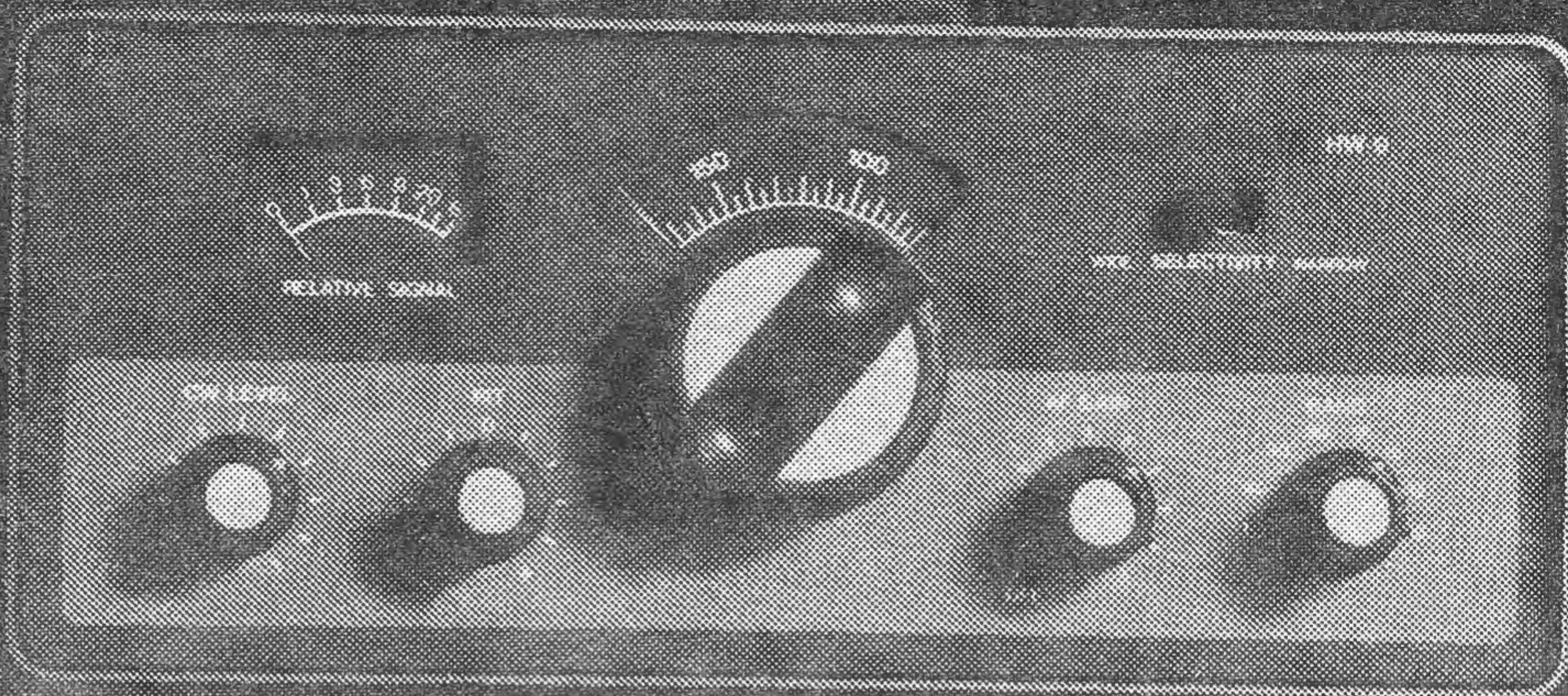


The Tradition Goes On.

HW-7
1972

HW-8
1975

HW-9
1984



**Exceptional Performance in a Great New Design.
The All-New HW-9 Deluxe QRP CW Transceiver.**

Setting the competitive standard in QRP CW has been our tradition through two generations of Transceivers. Now that tradition for excellence in performance, price and value brings to a new generation Heathkit Transceiver state-of-the-art microelectronics and lightweight portability.

Designed for broadband coverage of 250 kHz of CW on 80, 40, 20 and 15 meters and expandable to the 30, 17, 12 (WARC bands) and 10 meters, the HW-9 brings greater versatility, reliability and ease of use to the fields.

The HW-9 eliminates the necessity to fine tune each band. Its wide-band front end uses a double balanced mixer and 4-pole crystal

filter to pull in wide dynamic range signals. Solid state T-R switching provides for full break-in on any band. And the automatic AGC provides superior receiver performance and audio response.

The unit features single conversion in the main signal path, greatly reducing spurious responses while attaining outstanding image rejection. A full four watts of RF output power (three watts on 10 meters) is available on transmit RIT (Receiver Incremental Tuning) permits tuning the receiver 1 kHz above or below the transmit frequency. And the tuning dial is calibrated in 5 kHz increments for easy identification of frequency.

Rugged and lightweight, the HW-9 is ideal for portable operation. Transceiver can be powered from batteries, a lighter socket, solar power units or 120 240 VAC with the HWA-9 compatible power supply.

MORE DETAILS IN CATALOG

FREE! For complete details and specifications get a copy of the latest Heathkit Catalogue.



WRITE: Heath Company, 1020 Islington Ave., Toronto, Ontario M8Z 5Z3. Visit your nearest Heathkit Electronic and

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